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PROFILES OF PH.D.'S IN THE SCIENCES, SUMMARY REPORT ON FOLLOW-UP OF DOCTORATE COHORTS, 1935-1960.

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QUESTIONS ABOUT THEIR CAREERS AND BACKGROUNDS WERE POSED TO 10,000 DOCTORATE HOLDERS WHO HAD GRADUATED FROM UNITED STATES UNIVERSITIES IN 1935, 1940, 1950, 1955, AND 1960. THE SAMPLE ITSELF WAS STRATIFIED SO THAT THE MAJOR EMPHASIS WAS ON THE HEALTH RELATED SCIENCES. THE QUESTIONNAIRES REQUESTED INFORMATION ON PRESENT EMPLOYMENT, JOBS PREVIOUSLY HELD, GEOGRAPHIC LOCATION AND MIGRATIONS, DUTIES AND RESPONSIBILITIES, EARNINGS, AND FAMILY AND EDUCATIONAL BACKGROUND. SOME OF THE FINDINGS REPORTED ARE--(1) MOST RESPONDENTS WORK, OR HAVE WORKED, AT COLLEGES OR UNIVERSITIES, (2) THE PERCENTAGE OF DOCTORATE HOLDERS ENGAGED IN RESEARCH HAS, AND STILL IS, INCREASING, BUT ONLY A SMALL PERCENTAGE IS EXCLUSIVELY ENGAGED IN RESEARCH, (3) WORKING WIVES AND THE GOVERNMENT ARE PROVIDING MORE AND MORE SUPPORT FOR PREDOCTORAL EDUCATION, (4) POST-DOCTORAL GOVERNMENT SUPPORT HAS INCREASED, WHILE FOUNDATION SUPPORT HAS DECREASED, (5) GEOGRAPHIC MIGRATION OF WOMEN PH.D.'S IS A FUNCTION OF THEIR MARITAL STATUS, (6) SALARY LEVELS HAVE BEEN ADVANCING STEADILY, AND (7) THE MIDWEST HAS PRODUCED 40 PERCENT OF THE DOCTORATE HOLDERS BUT EMPLOYS ONLY 25 PERCENT OF THEM. SALARY LEVELS HAVE STEADILY ADVANCED WITH EACH NEW GENERATION STARTING AT A HIGHER LEVEL. THIS DOCUMENT IS A NATIONAL ACADEMY OF SCIENCES PUBLICATION 1293, CAREER PATTERNS REPORT NO. 1. (SK)

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Career Patterns Report No. 1

Prepared for the National Institutes of Health
under Contract PH 43-62-853

# PROFILES OF Ph.D'S IN THE SCIENCES

## SUMMARY REPORT ON FOLLOW-UP OF DOCTORATE COHORTS, 1935-1960

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# Preface

Advancement of the public welfare and development of all aspects of a modern technological society are intimately bound up with the education of an adequate number of the society's members to the highest levels of which they are capable. Beyond that, the efficient employment of the skills these members have developed is essential. Comparatively little is known, of a quantitative nature, regarding the career patterns of the most highly-trained segment of the populace, and but little more is known about the backgrounds from which it comes. More information on all of these questions is needed if the development of new knowledge is to proceed at an adequate pace, and if this new knowledge is to be translated into accomplishments that can realize the bright promise of modern science and technology. Human agency is required for any of these developments to take place, and human resources are the basic determiner of the rate of development of science, technology, and social institutions generally. This report seeks to throw light on the career patterns of carefully selected samples of the most highly-trained manpower in the country, with particular reference to people in the health-related sciences.

The National Institutes of Health has provided support for this study, since its inception in 1962, as the first in a series of PhD Career Patterns Studies. Within the National Institutes of Health, the Resources Analysis Branch of the Office of Program Planning has furnished program guidance assuring that design and analysis anticipate practical policy considerations aimed at a broader and deeper understanding of the educational processes and career achievements that underlie the development of health resources. The study was based upon and made possible by the previous development of the Doctorate Records file of the Office of Scientific Personnel of the National Academy of Sciences--National Research Council. This file, which comprises the names of all holders of third-level research degrees from 1920 to the present and information about all degrees held by these people, was built up with the support of several public and private agencies, and is currently being maintained by the support of the National Science Foundation and the United States Office of Education. The file has been the starting point for a number of studies of doctorate-holders, including a series of publications relating to doctorate production and baccalaureate origins of doctorates. The present study is the most far-ranging and comprehensive follow-up study based upon the Doctorate Records file, and includes data on the professional careers of 10,000 holders of doctorate degrees, obtained over a quarter of a century. It concentrates on the aspects of these careers that are important for the development of scientific-manpower information and for the guidance of policy of government agencies seeking to improve the nation's scientific and technical resources, both individual and institutional. It is but the first step toward an understanding of these careers that will help make possible the development of programs of maximum efficacy and wisdom with respect to the relations of government and the educational resources of the country. It is hoped that this feed-back of career information may be beneficial to the National Institutes of Health and its associated organizations, to the universities and colleges from which these people came, and to the employers of high-level manpower generally.

The general design of this study is relatively simple, although the detailed data deriving from it are highly complex in their meaning and interpretation. Basically, samples were drawn from the doctorate-graduate populations of each fifth year--samples deemed to be sufficient in size to yield stable statistical results. The members of each graduation cohort, beginning in 1935, were followed up by means of a questionnaire, to determine what they were doing in each fifth year following graduation. Where were they living? For whom were they working? What sort of work were they doing? If in academic settings, what was their status in the academic hierarchy? What were their

earnings? In addition to such questions as these, the questionnaire sought information regarding the backgrounds from which they had come--information now gathered routinely from each new PhD graduate as part of the Doctorate Records, but not gathered prior to 1957 It also sought information with respect to sources of support for predoctoral and postdoctoral study, and for research that these people might now be doing. The fields represented in this study were primarily in the health-related sciences, but there were samples drawn from other fields also, in order to provide a wider context for the interpretation of the data.

This report is divided into a summary of major findings, chapters dealing with several of the important aspects of the careers of these doctorate-holders, and a number of appendixes with additional detailed information for those who wish to examine in greater depth the career patterns of various subgroups. It will be apparent to the thoughtful reader that there is a great deal of important information still to be derived from the data-bank from which the present report was prepared. It is expected, and indeed hoped, that many questions will be raised by the results here described. Comment and suggestions will be warmly welcomed by the author of the report, by the Office of Scientific Personnel, and by the National Institutes of Health.

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# Summary

Ten thousand doctorate-holders were asked about their professional careers. They were graduates of United States universities in the years 1935, 1940, 1945, 1950, 1955, and 1960. A carefully stratified sample was included in the study, placing major emphasis on the health-related sciences, but including all fields, arts and humanities as well as sciences. They were asked about the jobs they hold and have held, their geographic migrations, functions performed on the job, earnings, and about their family and educational backgrounds. The major findings may be briefly summarized as follows:

- Most of them now work, and have worked in the past, in the nation's colleges and universities. However, as careers mature, there is a net shift away from university employment to other categories. The more recent graduates have had less academic employment, but also shift less to non-academic jobs later in their careers.
- The Midwest produced 40 per cent of the doctorates, but at present employs only 25 per cent. The South produced 12 per cent of the doctorates, and currently employs 24 per cent. New England produced one doctorate out of eight, and employs 1 in 14. The West produced 12 per cent of the doctorates, and employs half again as many. The Middle Atlantic states produced just about as many as they employ.
- The percentage of doctorate-holders engaged in research, and the average time spent in research, have been going up steadily. Still, the percentage who do research exclusively is rather small; a healthy balance of research and teaching, or research and administration, or all three together, is the rule.
- There have been significant changes in sources of support for predoctoral education over the past quarter of a century. Family support has tended to shift from parents to working wives; the government has assumed a much larger role; and the students' own earnings are a decreasing percentage of the total.
- There has been a marked increase in postdoctoral fellowship support by government agencies, and a relative drop in foundation support. Duration of such fellowships has not changed markedly in 25 years.
- Each new student generation has been drawn from a broader social base than its predecessor. As education has become more general, the lower socio-economic groups have produced more doctorates. The professional portion of the population, although still the predominant source, has declined relatively as the lower-income groups have achieved more education.
- Job mobility, both as to number of job changes and as to changes from field to field, was accelerated by World War II, but has declined as the postwar era has passed into history. Field-switching is most characteristic of the less-specialized fields, in spite of the fact that the more general fields allow greater latitude before a shift is registered as a category change. Those who become deeply immersed in research shift less than do the others.
- Women doctorate-holders are employed primarily in colleges and universities, and principally in teaching positions. They do less research, far less administration, and tend to be more polarized between research and teaching than are the men; fewer of them have a balanced combination of responsibilites.
- Geographic migration of women PhD's varies according to marital status, as wives move with their husbands' job opportunities. New England loses a smaller percentage of women than of men; the South gains fewer. The West gains more single women but fewer married women.
- Of those PhD's who spend half or more of their time on research, about half are supported by private resources, half by government sources. Support for the younger researchers comes more from government; in the bio-sciences, the Public Health Service is the sole research supporter of twice as high a proportion of the graduates of the most

recent decade as of the graduates of the earliest decade.

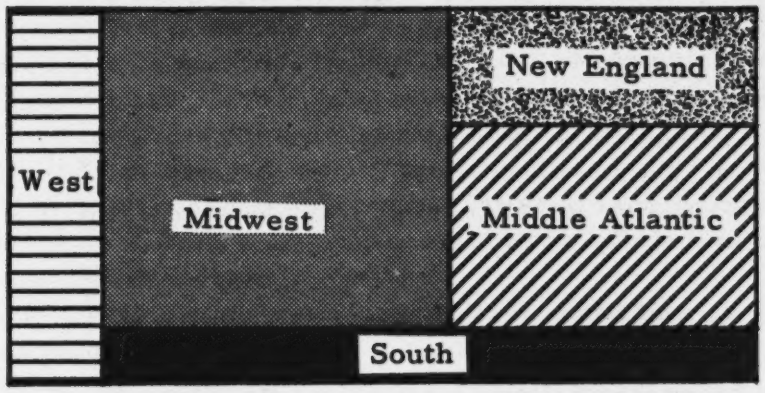
- Salary levels have been advancing steadily, with each new generation of graduates starting at a higher level and advancing more rapidly than the earlier cohorts. Salary varies more by function performed on the job than by field, although there is interaction between these factors. Administrators obtain the highest salaries, teachers the lowest, across almost all fields and all ages of graduates.

Figure 1

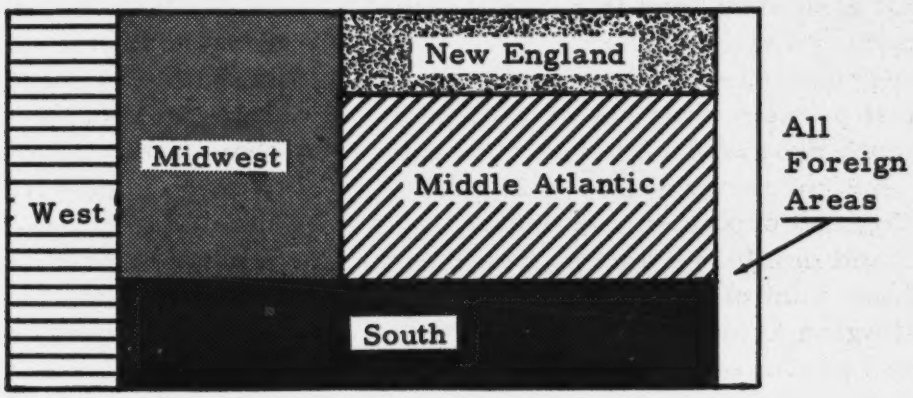
Relative Importance of Geographic Regions at Successive Career Stages

Total, All Cohorts

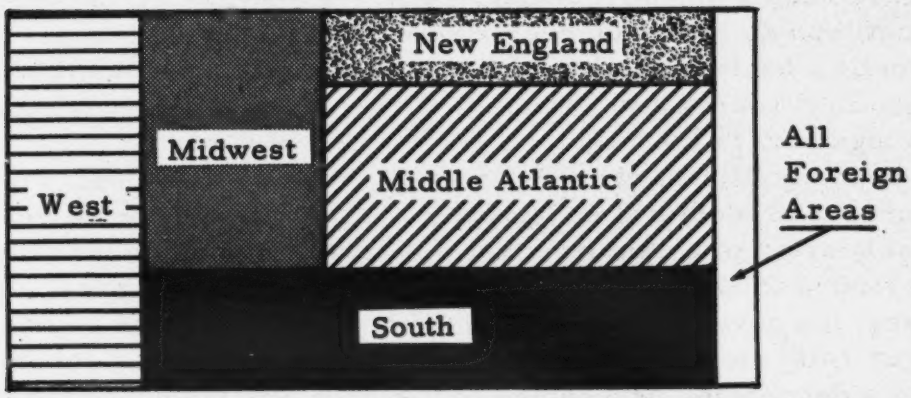
Region of PhD




Region of First Postdoctoral Job




Region of Present Job



# PROFILES OF Ph.D'S IN THE SCIENCES

# Introduction

## Origins of the Present Study

The present study originated in an interest shared by the National Institutes of Health (NIH) and the Office of Scientific Personnel. Both offices have been concerned about manpower problems for many years, in particular with respect to high-level personnel. The Office of Scientific Personnel had accumulated, with the help of several private and public agencies, a comprehensive file of the names of doctorate-holders from United States universities, dating back to 1920. This is known as the Doctorate Records File, collected through a continuing Doctorate Survey. The National Institutes of Health is concerned with the educational processes that produce doctorates in the health-related sciences, and with the utilization of these people after they achieve the doctorate degree. The Office of Scientific Personnel has an interest in both educational processes and utilization, and the possibility of productive feed-back of postdoctoral-experience data into the educational process. Because the common interest between the two agencies was so extensive, arrangements were made to canvass the postdoctoral careers of systematic samples of doctorate-holders. The National Institutes of Health provided financial support and program guidance; the follow-up study of careers and data analysis have been done by the Office of Scientific Personnel. Progress and preliminary reports have been prepared over the past two years; the present report is the first comprehensive account of the study and findings.

## General Description of Data Collected

Each person included in the study was asked to complete a questionnaire, the first items of which had been filled in from the machine records of the Office of Scientific Personnel. The respondents were asked to check the accuracy of this pre-recorded information and to provide a number of items of information about jobs held at each five-year interval following the doctorate degree. In addition, they were asked to provide certain items of background information. Questions asked regarding jobs included the name and location of employer; the field of specialization; the percentage of time devoted to teaching, to research, to administration, and to other activities; and annual professional income. If the respondent was employed by a college or university, information was sought regarding academic rank and status as faculty or non-faculty, dean or department chairman.

Background information included occupational category of father, educational level of father and mother, number and ages of siblings, marital status and ages of children, size and type of high school of origin, and date of high school graduation. Information that has never been collected as part of the Doctorate Survey, but which was included in the present study, includes sources of support during graduate years, source of support of postdoctoral fellowship, and length of such fellowship, if any. Information was also requested as to the number of job changes during each five-year period following graduation, and, for the current position only, sources of support for research, if any research was being done. Finally, to facilitate indentification and collation of records, the individual's social security number was requested.

## The Sample

Interest on the part of NIH was naturally concentrated particularly in the health-related sciences, but was extended to all doctorate fields in order to furnish a broad normative base for interpretation of the data in specialized science fields. In order to obtain long-term career data, and yet include also the experience of more recent doctorate-holders, the various doctorate years were sampled in a sytematic fashion, a sample being drawn from each fifth-year cohort, beginning in 1935. Earlier, it had been intended to go back to 1925, but it was found that, because of the age of that group, differential death rates would be so high as to result in severely biased

data--the younger members of each of the earliest cohorts being necessarily predominant in the respondent group. For each field-and-year group, the original sample included approximately 100 cases, provided there were that many in the given year and field. Because the rate of doctorate production in the years 1935, 1940, and 1945 was low, the following years, 1936, 1941, and 1946, were included where necessary to increase the sample size. In all of the tabulations to follow, however, the cohorts will be identified only by the years 1935, 1940, 1945, 1950, 1955, and 1960, respectively. Where the number of cases in any given field-and-cohort exceeded 100, a random-sampling procedure was used to reduce the included sample to about 100 cases. This initial sampling resulted in 15,348 cases; of these, 517 were found to have died. In terms of percentages, the death rate ranges from 0.3 per cent in the 1960 cohort to 8.7 per cent in the 1935 cohort, and is 3.36 per cent for the total group. The total number of living PhD's in this study--14,831--is given in Table 1 by field and cohort. For greater detail, Appendix 2 contains the data for the 24 subfields.

TABLE 1

Questionnaire Total: Number of Presumed Living PhD's in Follow-Up Sample, by Field and Cohort

| Field of Doctorate | All Cohorts | Cohort 1935 | Cohort 1940 | Cohort 1945 | Cohort 1950 | Cohort 1955 | Cohort 1960 |
|---|---|---|---|---|---|---|---|
| Total, All fields | 14831 | 2213 | 2492 | 2002 | 2383 | 2809 | 2932 |
| Bio-Sciences, Total | 4481 | 538 | 840 | 470 | 597 | 929 | 1107 |
| Basic Medical Sciences | 2712 | 278 | 555 | 231 | 355 | 611 | 682 |
| Other Bio-Sciences | 1769 | 260 | 285 | 239 | 242 | 318 | 425 |
| Medical Sciences | 385 | 60 | 53 | 35 | 52 | 102 | 83 |
| Agricultural Sciences | 767 | 107 | 107 | 95 | 151 | 187 | 120 |
| Psychology | 662 | 104 | 113 | 115 | 124 | 110 | 96 |
| Social Sciences | 2667 | 431 | 427 | 428 | 417 | 469 | 495 |
| Mathematics | 641 | 100 | 88 | 88 | 102 | 133 | 130 |
| Physical Sciences | 1880 | 311 | 325 | 277 | 360 | 305 | 302 |
| Engineering | 700 | 106 | 110 | 89 | 137 | 136 | 122 |
| All other Fields | 2648 | 456 | 429 | 405 | 443 | 438 | 477 |

## Questionnaire Procedure

Addresses for the sample drawn from the Doctorate Records file were sought from several sources: the address lists of professional and scientific societies, American Men of Science, Directory of American Scholars, Who's Who, and any other available compendium. For cases not located in this way, addresses were sought from the alumni societies of the schools from which these people received their baccalaureate and doctorate degrees. All of these sources taken together provided addresses for over 92 per cent of the original sample. These addresses did not all become available simultaneously, and the questionnaires were consequently not all sent at the same time. It has been found that address lists are highly volatile--that is, because of frequent changes, they are best used quickly, lest they become obsolete. Three main groups of cases were therefore involved in mail-outs, as different segments of the address lists became available. Also, as expected, the returns did not come in uniformly, and some cases needed a follow-up letter to induce them to respond. A special effort was made with respect to one group of cases that had not responded to either the original letter or the follow-up. For a sample of 50 such cases, an attempt was made to abstract the needed data from American Men of Science, enter it in pencil on a copy of the questionnaire, and send it out for verification. This proved to be very laborious and expensive,

and the results did not warrant continuing it. The response rate, at the cut-off date for processing of the records for this report, was 67.5 per cent overall. While this is very satisfactory as mail surveys go, it was felt that it should be examined for clues to possible bias induced by non-response. Consequently, the final usable total of returned questionnaires was compared with the originally drawn sample by field and cohort to ascertain the degree of bias, if any, that could be associated with these variables alone or in combination. The results are indicated in Table 2 and Appendix 3.

Comparison of questionnaire-return rates by cohort shows that higher return rates are obtained for the younger cohorts than for the older cohorts, although the trend is not completely uniform within fields. Higher return rates are generally obtained from male subjects than from female subjects. This is typical for returns from mail-out procedures, especially where female subjects whose careers have been interrupted by family responsibilities doubt that the requested data will be useful. In terms of fields, higher return rates were obtained from those with doctorates in the biological sciences, psychology, mathematics, and the physical sciences. Lower return rates were obtained in the social-science fields, the humanities fields, education, and engineering.

A special procedure was used in the case of the 1960 engineering doctorates who were participants in a similar study being conducted at approximately the same time. As the questionnaires were very similar in the two studies, those from the engineering study were used for the 1960 cohort rather than annoy the subjects with an essentially duplicate request for the Career Patterns study. A few items were not complete for this group, but no substantial limitations of the data were induced by this procedure, and quite possibly the return rate for both studies was enhanced by this procedure for this special group.

When the data came in, the questionnaires were coded for IBM machine-processing, and each coding step was checked by a second coder to insure high accuracy. Nevertheless, when the cards had been punched--four IBM cards per questionnaire--it was found necessary to go through some further checking by computer operations designed to detect and eliminate certain residual errors, such as impossible codes. No machine processes, however, could eliminate errors within the permissible range of variation, and it is probable that some such errors remain. They should, however, be minimal and not of a magnitude that would induce errors in final interpretation. In the computer operations, it was necessary at one stage to insert a few blank records to complete a data

TABLE 2

Return Rate: Numbers and Percentages of Usable Returns, by Field and Cohort

| Field of Doctorate | All Cohorts | | 1935-1940 Cohort | | 1945-1950 Cohort | | 1955-1960 Cohort | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| Total, All Fields | 10017 | 67.5 | 2965 | 63.0 | 2916 | 66.5 | 4136 | 72.0 |
| Bio-Sciences, Total | 3166 | 70.6 | 922 | 66.9 | 746 | 69.9 | 1498 | 73.6 |
| Basic Medical Sciences | 1888 | 69.6 | 559 | 67.1 | 402 | 68.6 | 927 | 71.7 |
| Other Bio-Sciences | 1278 | 72.2 | 363 | 66.6 | 344 | 71.5 | 571 | 76.9 |
| Medical Sciences | 254 | 66.0 | 70 | 61.9 | 63 | 72.4 | 121 | 65.4 |
| Agricultural Sciences | 536 | 69.9 | 151 | 70.6 | 168 | 68.3 | 217 | 70.7 |
| Psychology | 468 | 70.7 | 144 | 66.4 | 171 | 71.5 | 153 | 74.3 |
| Social Sciences | 1712 | 64.2 | 506 | 59.0 | 524 | 62.0 | 682 | 70.7 |
| Mathematics | 458 | 71.4 | 131 | 69.7 | 131 | 68.9 | 196 | 74.5 |
| Physical Sciences | 1362 | 72.4 | 444 | 69.8 | 456 | 71.6 | 462 | 76.1 |
| Engineering | 463 | 66.1 | 138 | 63.9 | 144 | 63.7 | 181 | 70.2 |
| All Other Fields | 1598 | 60.3 | 459 | 51.9 | 513 | 60.5 | 626 | 68.4 |

block. It is possible that elimination of these blanks may, in some tables, have escaped our vigilance . It should occasion no concern, however, if some tables show 10,020 cases rather than 10,017, the actual number. The blanks would always fall in an "unknown" or "no data" category and thus do not distort the statistical record. Similarly, in a few tables, a single case was lost through some undiagnosed machine error, so that the total is 10,016. Again it is apparent that no significant differences will be induced by this unexplained discrepancy. For computer processing, the data from the four punched cards were transferred to a consolidated tape record to facilitate cross-tabulations. Most of the tables in this report were produced directly by the computer; some have been re-typed from the computer data where a format rearrangement or combination of tables was desired.

Because the records were received at various times over a period of several months, it became necessary to set an early date for "data cut-off" with respect to "present job" in order to permit uniform interpretation of this term. This date was set as of 1 January 1963, and thus reflects a situation approximately two years later than the "1960 job," which was specified on the questionnaire form as the job held at the end of December 1960.

In the several chapters of this report, chief emphasis will be placed on description of the data and interpretation of statistical significance, with only minor emphasis on the social implications of the data. In some cases, however, comments regarding significance of the data for governmental policy may be attempted, where interpretations are sufficiently clear-cut. Because of the complexities of the many factors involved in any educational and manpower question, and of the subtleties of the interactions of policies adopted by government agencies on the one hand and those of a large number of independent colleges and universities on the other (to say nothing of the manpower policies of thousands of independent business establishments), many of the implications that may be potential in these data can only be understood after a much more extensive study than is possible in this first report. Cross-tabulations, holding constant some variables while allowing others to vary as they may, will no doubt eventually permit a much clearer, if more complex, picture to emerge from the study of these 10,000 professional careers.

Mention should be made at this point of some of the terms and categories that will be used throughout the report. The first concerns fields of specialization. Whenever field is used without qualification, it refers to field of doctorate. The original sampling was based on 24 subfields; these are generally given in the appendix tables. For presentation in the text, these are generally condensed into a smaller number of more inclusive groups. Some comments regarding inclusions and exclusions may be helpful: The term "Bio-Sciences, Total" is used to include the "Basic Medical Sciences" and "Other Bio-Sciences," but it does not include what are termed the "Medical Sciences" and "Agricultural Sciences." Within the subfields, the term "Physiology" is short for "Physiology and Related," including anatomy, cytology, embryology, and pathology. "Botany" includes phytopathology. "Zoology" includes entomology. "Miscellaneous Biology" includes biophysics, biostatistics, ecology, hydrobiology, and other bio-sciences not specifically categorized."Agricultural Sciences" include forestry, agronomy, fish and wildlife, horticulture, and animal husbandry, as well as fields carrying a specific agricultural label. "Medical Sciences" include medicine and surgery, pharmacy, public health, veterinary medicine, and hospital administration. "Sociology" includes anthropology and archeology. "Political Science" includes public administration and international relations. "Professions" include business administration, home economics, journalism, law, library and archival science, religion and theology. "Arts and Humanities" include fine and applied arts, linguistics, music, philosophy, speech, and dramatic arts.

The basic geographic regions are the nine census regions of the United States. These are as follows: New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut. Middle Atlantic: New York, Pennsylvania, New Jersey. East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin. West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas. South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida. East South Central: Kentucky, Tennessee, Alabama, Mississippi. West South Central: Arkansas, Louisiana, Oklahoma, Texas. Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada. Pacific and Insular, abbreviated to Pacific: Washington, Oregon, California, Alaska, Hawaii, Puerto Rico, Canal Zone, Virgin Islands.

Chapter 1

# EMPLOYMENT AND GEOGRAPHIC MIGRATION OF DOCTORATE-HOLDERS

How many of the doctorate-holders are employed? Who employs them? Where are they employed? These are questions of primary concern to those interested in the optimal utilization of high-level manpower. They are also questions that can be answered rather simply, with a minimum of ambiguity. The answer to the first one is that all but 3 per cent of those responding to the questionnaire are now employed, and that 94 per cent of the group are not now seeking other employment. Seven out of 10 of those not now employed are not seeking employment--most of them apparently are enjoying retirement status, as they are concentrated in the oldest groups. This leaves fewer than 90 people out of 10,000 PhD's in the study who indicated they would like to obtain employment, either part time or full time. No doubt many of them have since done so: this is a remarkably small percentage, and may represent, at least in part, "frictional unemployment" in the process of labor turnover. Of those who are not now employed and not seeking employment, a number are, of course, women who are in effect employed full time as home-makers. No doubt, also, many of these will eventually return to the labor market.

As may be ascertained by reference to the questionnaire form, those who indicated that they were not employed at the time were asked to fill in their last previous employment in the space marked "present job." The data of Table 3 permit one to ascertain how many of these were employed in various types of jobs at the time of their retirement or other separation.

The great bulk of all respondents in this study--59 per cent--are employed by colleges and universities. The U.S. government employs 8 per cent, business and industry 15 per cent, while the remaining 18 per cent are distributed among all other categories of employers, including 3 per cent of the respondents employed in foreign countries. Table 4 provides greater detail by employer category and graduation cohort, combining the six cohorts into three decade groups. Still greater detail is provided in Appendix 4.

TABLE 3

Present Employment and Job-Seeking, by Cohort and Employer Category

| Present or Last Employer Category Cohort or Employer [a] | Total Number of Respondents | Per cent Employed | | | Per cent NOT Employed | | | Per cent Status Unknown |
|---|---|---|---|---|---|---|---|---|
| | | Not Seeking Job | Seeking Other Jobs | | Not Seeking Job | Seeking a Job | | |
| | | | Full time | Part time | | Full time | Part time | |
| All Categories | 10017 | 94.1 | 2.1 | .4 | 2.2 | .5 | .3 | .2 |
| Cohort 1935 | 1355 | 89.9 | 1.3 | .7 | 6.7 | 1.0 | .2 | .1 |
| Cohort 1940 | 1610 | 93.5 | 1.4 | .2 | 3.7 | .8 | .2 | .2 |
| Cohort 1945 | 1289 | 93.6 | 1.6 | .8 | 2.0 | .8 | .9 | .3 |
| Cohort 1950 | 1627 | 95.9 | 2.3 | .4 | .8 | .3 | .2 | .1 |
| Cohort 1955 | 1912 | 96.0 | 2.4 | .2 | .7 | .2 | .5 | .1 |
| Cohort 1960 | 2224 | 94.7 | 3.2 | .4 | .9 | .4 | .2 | .3 |
| College/University | 5917 | 95.0 | 1.8 | .3 | 2.1 | .4 | .3 | .2 |
| U.S. Government | 825 | 95.4 | 1.8 | .6 | 1.3 | | .6 | .2 |
| Business, Industry | 1506 | 96.3 | 1.8 | .2 | .7 | .7 | .2 | .1 |
| All Other Employers | 1769 | 88.9 | 3.6 | 1.1 | 4.3 | 1.2 | .4 | .4 |

[a] Refers to last previous employer, in the case of those not presently employed.

TABLE 4

EMPLOYERS OF DOCTORATE-HOLDERS, 1962 JOB

| COHORT | FIELD | PERCENT IN EACH EMPLOYER CATEGORY | | | | | |
|---|---|---|---|---|---|---|---|
| | | TOTAL NO. | TOTAL % | COLLEGE & UNIVERSITY | BUSINESS & INDUSTRY | FEDERAL GOV'T | ALL OTHER EMPLOYERS |
| ALL | TOTAL, ALL FIELDS | 10016 | 100.0 | 59.1 | 15.0 | 8.2 | 17.7 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2964 | 100.0 | 55.8 | 16.6 | 8.9 | 18.7 |
| | BIO-SCIENCES, TOTAL | 921 | 100.0 | 54.0 | 15.0 | 10.7 | 20.3 |
| | BASIC MED. SCIENCES | 558 | 99.9 | 47.8 | 20.4 | 10.9 | 20.8 |
| | OTHER BIO-SCIENCES | 363 | 100.1 | 63.4 | 6.6 | 10.5 | 19.6 |
| | MEDICAL SCIENCES | 70 | 100.1 | 42.9 | 4.3 | 8.6 | 44.3 |
| | AGRIC. SCIENCES | 151 | 100.0 | 47.7 | 13.2 | 21.9 | 17.2 |
| | PSYCHOLOGY | 144 | 100.0 | 42.4 | 13.9 | 9.0 | 34.7 |
| | SOCIAL SCIENCES | 506 | 100.0 | 67.4 | 4.9 | 7.9 | 19.8 |
| | MATHEMATICS | 131 | 99.9 | 74.8 | 14.5 | 5.3 | 5.3 |
| | PHYSICAL SCIENCES | 444 | 100.0 | 37.8 | 39.9 | 9.2 | 13.1 |
| | ENGINEERING | 138 | 100.0 | 34.8 | 47.1 | 6.5 | 11.6 |
| | ALL OTHER FIELDS | 459 | 100.0 | 73.9 | 5.4 | 3.5 | 17.2 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2916 | 100.1 | 60.4 | 15.3 | 7.9 | 16.5 |
| | BIO-SCIENCES, TOTAL | 746 | 100.0 | 58.7 | 13.9 | 10.5 | 16.9 |
| | BASIC MED. SCIENCES | 402 | 100.0 | 53.2 | 19.7 | 10.2 | 16.9 |
| | OTHER BIO-SCIENCES | 344 | 100.1 | 65.1 | 7.3 | 10.8 | 16.9 |
| | MEDICAL SCIENCES | 63 | 100.0 | 39.7 | 6.3 | 15.9 | 38.1 |
| | AGRIC. SCIENCES | 168 | 100.0 | 66.7 | 12.5 | 8.9 | 11.9 |
| | PSYCHOLOGY | 171 | 100.0 | 53.8 | 12.9 | 14.0 | 19.3 |
| | SOCIAL SCIENCES | 452 | 100.0 | 61.5 | 17.7 | 6.4 | 14.4 |
| | MATHEMATICS | 131 | 100.0 | 74.0 | 16.0 | 3.1 | 6.9 |
| | PHYSICAL SCIENCES | 504 | 100.0 | 39.9 | 36.9 | 7.9 | 15.3 |
| | ENGINEERING | 144 | 100.0 | 38.9 | 45.8 | 3.5 | 11.8 |
| | ALL OTHER FIELDS | 513 | 100.0 | 73.9 | 3.1 | 3.7 | 19.3 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 4136 | 100.1 | 60.5 | 13.8 | 8.0 | 17.8 |
| | BIO-SCIENCES, TOTAL | 1498 | 99.9 | 59.9 | 10.5 | 10.1 | 19.4 |
| | BASIC MED. SCIENCES | 927 | 100.0 | 57.7 | 13.5 | 9.7 | 19.1 |
| | OTHER BIO-SCIENCES | 571 | 100.1 | 63.6 | 5.8 | 10.7 | 20.0 |
| | MEDICAL SCIENCES | 121 | 100.0 | 40.5 | 24.0 | 9.1 | 26.4 |
| | AGRIC. SCIENCES | 217 | 100.0 | 58.5 | 10.1 | 14.3 | 17.1 |
| | PSYCHOLOGY | 153 | 100.1 | 45.8 | 9.2 | 15.0 | 30.1 |
| | SOCIAL SCIENCES | 682 | 100.0 | 77.3 | 4.1 | 5.7 | 12.9 |
| | MATHEMATICS | 196 | 100.0 | 65.8 | 19.4 | 5.1 | 9.7 |
| | PHYSICAL SCIENCES | 462 | 100.0 | 34.6 | 38.5 | 10.4 | 16.5 |
| | ENGINEERING | 181 | 100.0 | 34.8 | 46.4 | 3.9 | 14.9 |
| | ALL OTHER FIELDS | 626 | 100.1 | 76.4 | 2.9 | 1.8 | 19.0 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

The next question after employment status concerns geographic location of these doctorate-holders. This likewise is a relatively simple question, but one that is better illuminated by taking into consideration their locations prior to their present job, specifically at the attainment of the doctorate degree and on the first job following the doctorate. As there have been important migrations within the United States over the period covered by this study, the data are presented for the total group and by decade cohorts in Table 5. In this table, the nine census regions of the United States are presented separately, and then in combinations that show the Midwest as one region, the South as one region, and the West, including the Rocky Mountain and Pacific states, as one region. This condensation permits a more graphic picture to be drawn, as shown in Figures 2, 3, and 4, in which the relative size of an area indicates its importance as a source or place of employment of the doctorate-holders.

The several geographic regions of the United States may be considered in terms of the population of doctorate-holders rather than in geographic size. In the description to follow, it is this population and its migrations to which reference is made.

The largest region of the United States, in terms of doctorate production, is the Midwest, whose doctorate-producing institutions constitute principally the "Big Ten." This section provides doctorate graduates in large numbers to all of the other sections of the country, and receives in return for postdoctoral employment relatively small numbers from all regions except New England. The latter exports more people to all regions than it receives in return for first postdoctoral jobs. The principal beneficiaries of the outflow from these two regions, and from the Middle Atlantic states, are the South and the West. The South receives more from every region, by ratios ranging from more than two-to-one to as high as five-to-one, than it returns to the other regions. The West receives more from each region except the South, than it returns to the other regions. The Middle Atlantic region is more nearly in balance, receiving more from the Midwest and New England than it returns to those regions, and exporting more to the South and the West than it receives from them. The net exchange results in fewer first postdoctoral jobs than doctorates produced for the Middle Atlantic states.

TABLE 5

Geographic Location of Doctorate-Holders at Three Career Stages, in Percentages

| Career Stage | Geographic Region | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | New Eng. | Mid Atl. | E.N. Cent. | W.N. Cent. | "Mid-West" | South Atl. | E.S. Cent. | W.S. Cent. | "The South" | Mtn. | Pac. | "The West" | For. |
| | | | | | Total, All Cohorts | | | | | | | | |
| Doctorate | 13.1 | 22.2 | 28.9 | 11.5 | 40.4 | 8.4 | 1.1 | 2.8 | 12.2 | 1.3 | 10.8 | 12.1 | -- |
| First Job | 8.6 | 20.1 | 19.0 | 8.6 | 27.6 | 13.4 | 3.6 | 6.2 | 23.2 | 4.2 | 10.6 | 14.8 | 5.5 |
| Present Job | 7.3 | 19.7 | 17.8 | 7.2 | 25.0 | 15.3 | 3.2 | 5.6 | 24.1 | 4.2 | 14.1 | 18.3 | 5.6 |
| | | | | | 1935-1940 Cohort | | | | | | | | |
| Doctorate | 15.4 | 23.4 | 29.3 | 12.8 | 42.1 | 7.9 | .5 | 1.4 | 9.8 | .6 | 8.7 | 9.3 | -- |
| First Job | 8.8 | 22.4 | 20.4 | 10.1 | 30.5 | 13.2 | 3.4 | 6.2 | 22.8 | 3.8 | 8.1 | 11.9 | 3.5 |
| Present Job | 7.5 | 21.0 | 18.5 | 7.3 | 25.8 | 16.5 | 2.7 | 5.9 | 25.1 | 3.5 | 13.3 | 16.8 | 3.8 |
| | | | | | 1945-1950 Cohort | | | | | | | | |
| Doctorate | 14.2 | 23.3 | 29.3 | 11.7 | 41.0 | 7.3 | .9 | 2.0 | 10.2 | .9 | 10.5 | 11.4 | -- |
| First Job | 9.3 | 19.5 | 19.4 | 8.9 | 28.3 | 13.2 | 3.7 | 5.6 | 22.5 | 4.4 | 10.9 | 15.3 | 5.1 |
| Present Job | 7.3 | 19.0 | 18.1 | 7.3 | 25.4 | 15.6 | 3.3 | 4.7 | 23.6 | 4.2 | 15.8 | 20.0 | 4.7 |
| | | | | | 1955-1960 Cohort | | | | | | | | |
| Doctorate | 10.8 | 20.5 | 28.3 | 10.4 | 38.7 | 9.4 | 1.6 | 4.4 | 15.3 | 2.1 | 12.6 | 14.7 | -- |
| First Job | 8.0 | 19.0 | 17.8 | 7.3 | 25.1 | 13.8 | 3.7 | 6.6 | 24.1 | 4.4 | 12.1 | 16.5 | 7.2 |
| Present Job | 7.2 | 19.3 | 17.0 | 7.0 | 24.0 | 14.2 | 3.5 | 6.0 | 23.7 | 4.8 | 13.6 | 18.4 | 7.4 |

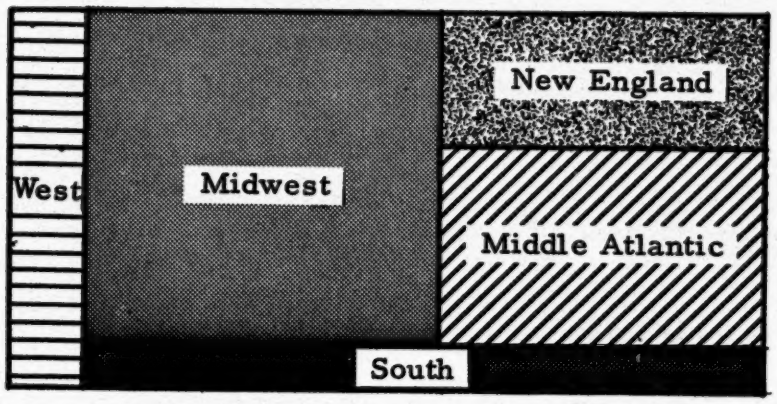
Figures 2, 3, and 4 provide graphic illustration, by decade cohorts, of the net effect of this internal migration from region of doctorate to region of first postdoctoral job, and finally to region of present job. In these diagrams, the general position of each of the

**Figure 2**

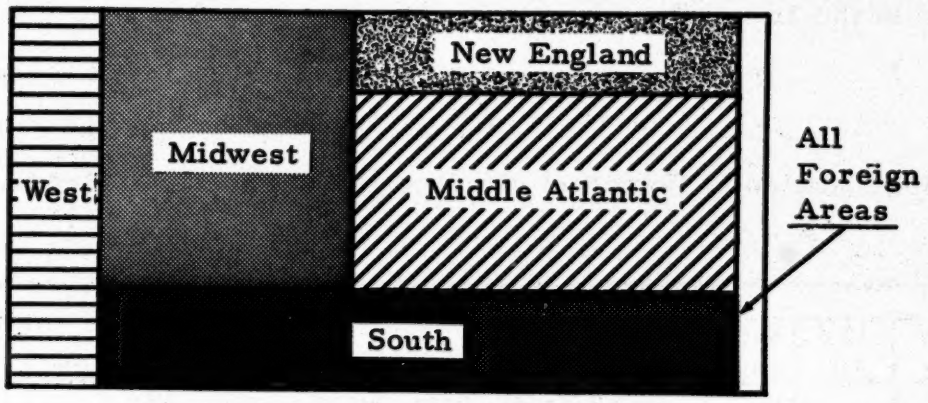
**Relative Importance of Geographic Regions at Successive Career Stages**

**Cohorts 1935, 1940**

**Region of PhD**




**Region of First Postdoctoral Job**




**Region of Present Job**

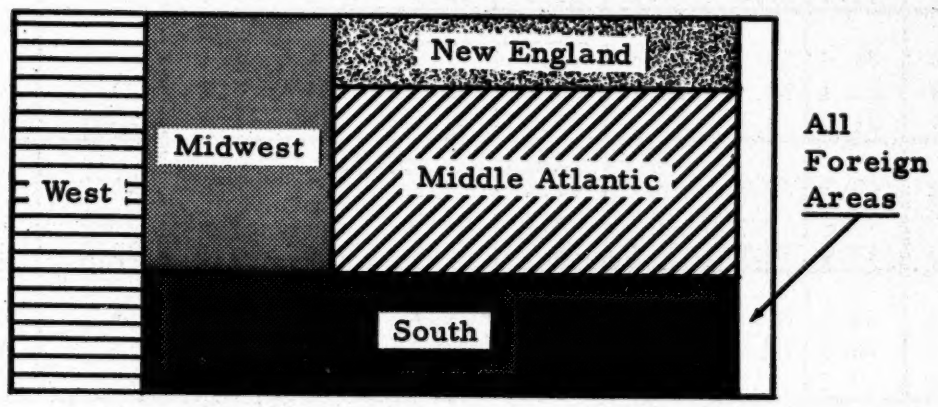
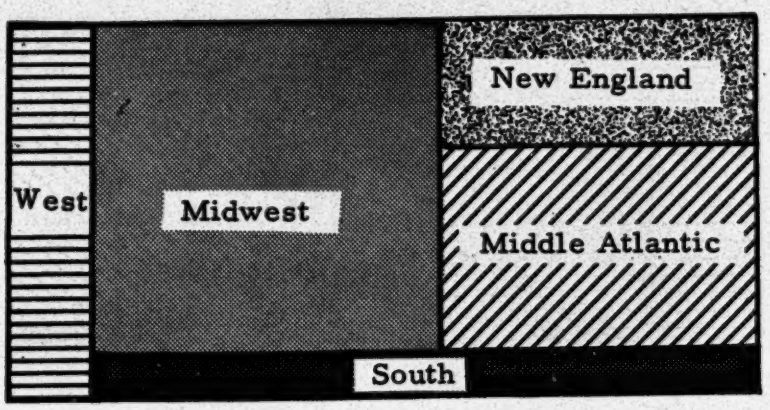


Figure 3

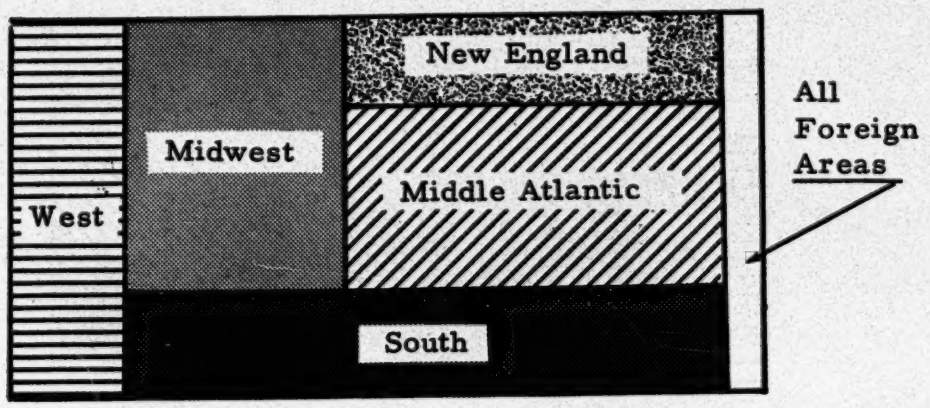
Relative Importance of Geographic Regions at Successive Career Stages

Cohorts 1945, 1950

Region of PhD




Region of First Postdoctoral Job




Region of Present Job

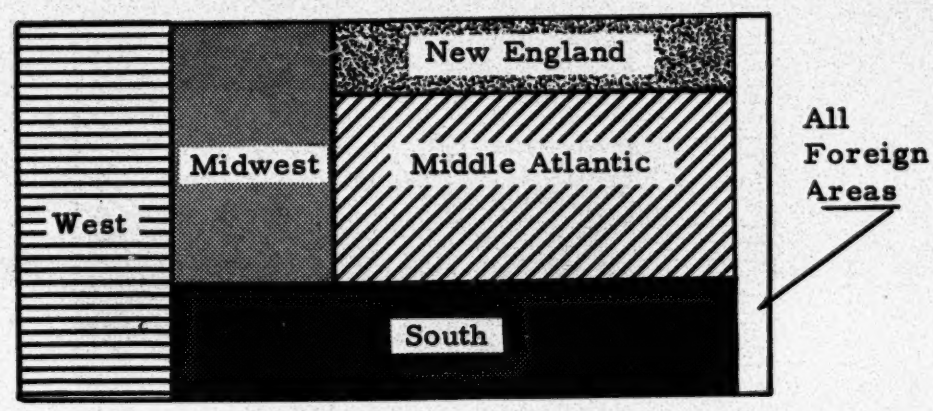
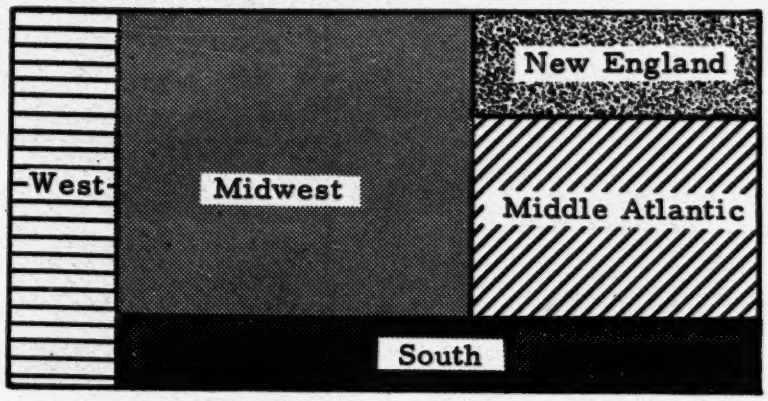


Figure 4

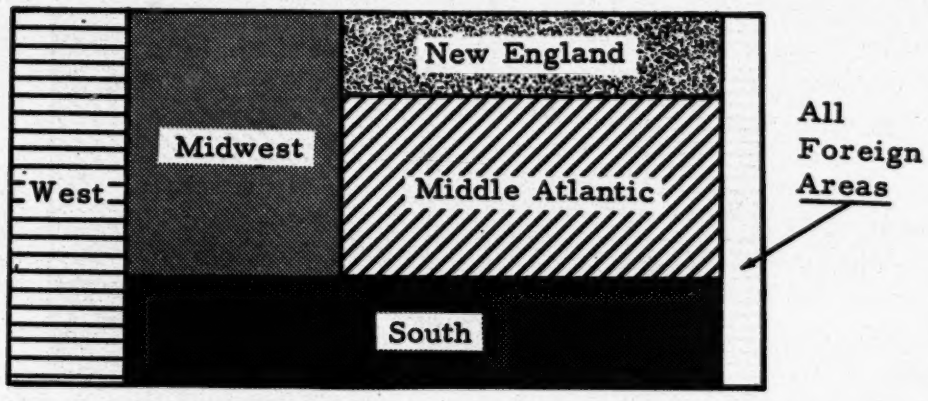
Relative Importance of Geographic Regions at Successive Career Stages

Cohorts 1955, 1960

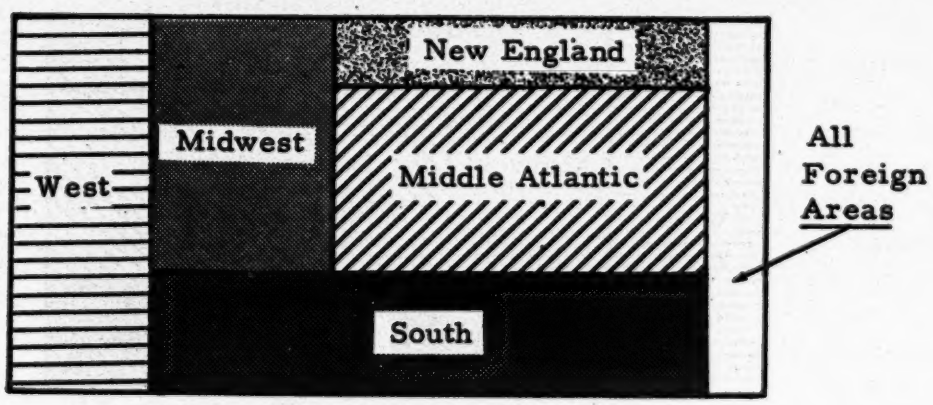
Region of PhD




Region of First Postdoctoral Job




Region of Present Job



regions in the United States is maintained as nearly as is possible with the geographic size distorted to represent numbers of people. It will be noted that there is a sixth region shown here--foreign areas. There is a return to home countries of a number of people who came to the United States for graduate education; it is chiefly these people who are shown in the foreign-area region. There are also, of course, some United States citizens who go abroad after the doctorate, but the numbers here are small. The gross emigration to areas outside the United States is rather small, in any case, and does not vary so much from region to region as to require explicit statement here.

In spite of changes in degree from decade to decade, the general trend described above holds across three decades as shown in Figures 2, 3, and 4. Figure 1, which has been presented in the general summary, shows the combined effect for all three decades taken together. Figure 5 also combines all three decades, but diagrams instead the process by which the changes in size come about, by showing the interchange between regions. In Figure 5 the various regions are pulled apart, as in an "exploded" diagram, to permit visualization of the inter-regional flows. The regional proportions shown in Figure 5 are those at the point of doctorate graduation; when the various flows have taken place, the size changes induced would be those shown in Figure 1 for the whole period, or Figures 2, 3, and 4 for the separate decade cohorts. It might be noted here that the changes that take place after the first postdoctoral job are less dramatic than those between doctorate and first job, but continue the trend in the same direction, so that the combined flow from region of doctorate to region of present job would be even greater than that diagrammed in Figure 5.

The data upon which Figure 5 is based are shown in Table 6, which also gives the inter-regional flow at the next stage, from first postdoctoral job to present job. By reading down the diagonal of this table, it is possible to note the percentage of each region's people who do not move, but stay within the region, and to compare the total retained within any region with the number received from each other region, at each stage of career development. In the top portion of Table 6, it can be seen that although the retention rate is highest for the South, the total number retained in that region is smaller than the increment from the Midwest alone. New England has the lowest retention rate, only about a third of its doctorate graduates remaining there for their first postdoctoral jobs. This is no doubt in part due to the fact that very large numbers of people come to New England universities from all over the country, having completed their undergraduate education elsewhere. In the move from first postdoctoral to present job, New England is again low in retention rate--about 49 per cent. The West is high, with three quarters of the people who remain there or go there for their first postdoctoral jobs remaining there until their present jobs. This is of course in part a reflection of the general migration to California, which has been growing steadily by internal migration for a long time.

The variations from field to field in region of present job are shown in Table 7. The differences here are rather striking, and reflect principally the variations in metropolitan concentration. Variations from the earlier to the later cohorts are also reflected here; the explanation of these temporal variations is less clear-cut. The more detailed breakout by individual cohorts and subfields is shown in Appendix 5.

An analysis was made of the inter-regional migration, by field, from region of doctorate to first postdoctoral job and from that job to the present one. These details are not presented, however, as there seemed to be only minor variations in amount of migration and the results might be explained on a random-sampling basis only. It was clear that the total amount of migration was much greater from doctorate to first job than from first to present job. When the cross-tabulations of these moves are converted to contingency coefficients, the PhD-to-first-job coefficient is .71, and from first job to present one the coefficient is .86, with all cohorts and fields combined. When the cohorts are considered separately, the job-to-job variations were small but consistent, the amount of movement being a direct function of the length of time elapsing in which movements could take place. The PhD-to-first-job coefficients were .70, .71, and .73 for the three successive decade cohorts; the variations are probably too small to warrant interpretation.

## TABLE 6

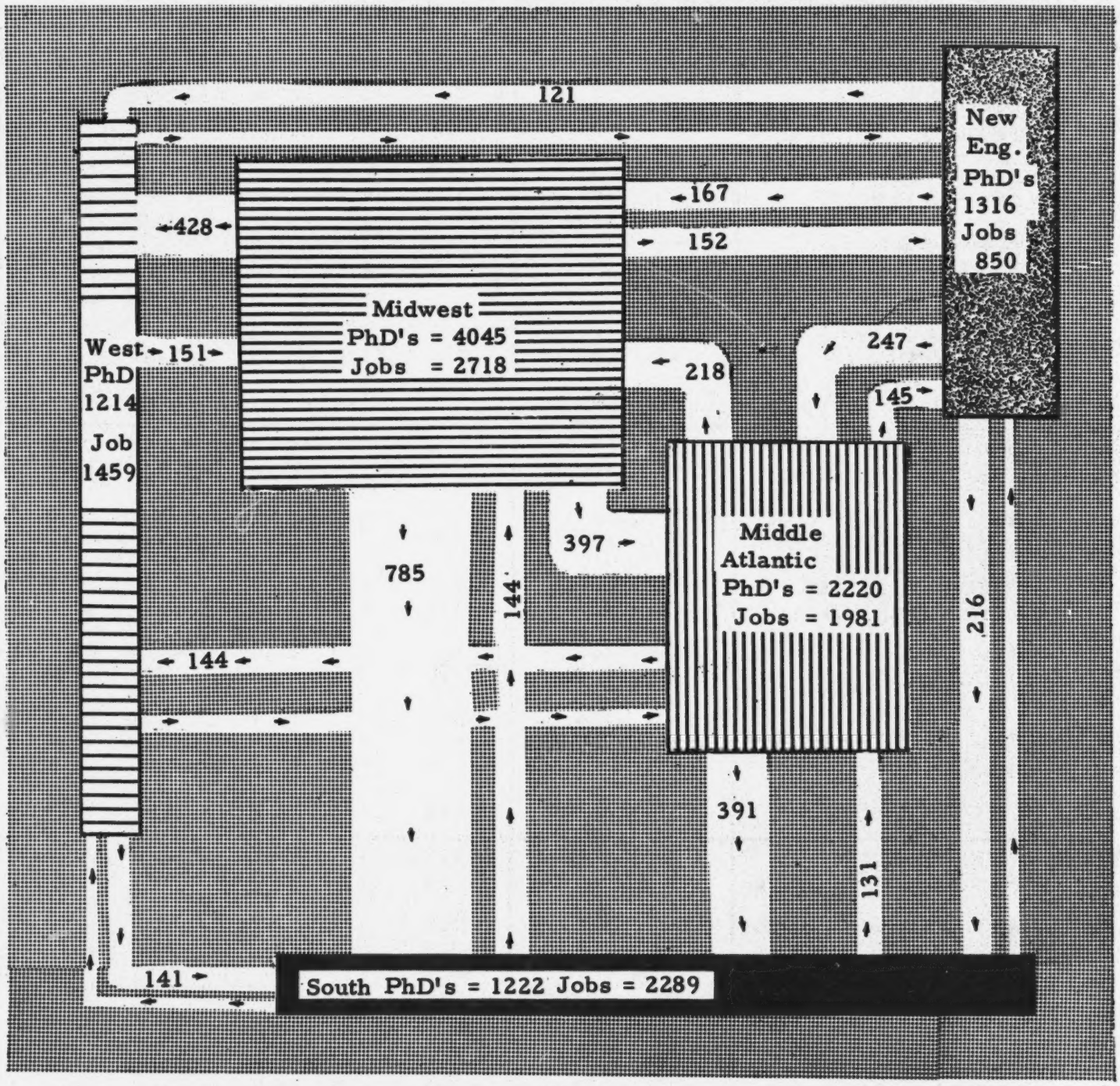
### Numbers and Percentage Migration from Region to Region at Three Career Stages

| Region of Origin | Total, All Regions | Region of Destination: New England | Middle Atlantic | Midwest | South | West | Foreign | Unknown |
|---|---|---|---|---|---|---|---|---|
| Doctorate | | First Postdoctoral Job | | | | | | |
| Total, All Regions | 10017 | 850 | 1981 | 2718 | 2289 | 1459 | 541 | 179 |
| | 100.0 | 8.5 | 19.8 | 27.1 | 22.8 | 14.6 | 5.4 | 1.8 |
| New England | 1316 | 458 | 247 | 167 | 216 | 121 | 88 | 19 |
| | 100.0 | 34.8 | 18.8 | 12.7 | 16.4 | 9.2 | 6.7 | 1.4 |
| Middle Atlantic | 2220 | 145 | 1122 | 281 | 391 | 144 | 99 | 38 |
| | 100.0 | 6.5 | 50.5 | 12.6 | 17.6 | 6.5 | 4.5 | 1.7 |
| Midwest | 4045 | 152 | 397 | 1975 | 785 | 428 | 224 | 84 |
| | 100.0 | 3.8 | 9.8 | 48.8 | 19.4 | 10.6 | 5.5 | 2.0 |
| South | 1222 | 51 | 131 | 144 | 756 | 66 | 52 | 22 |
| | 100.0 | 4.2 | 10.7 | 11.8 | 61.9 | 5.4 | 4.3 | 1.8 |
| West | 1214 | 44 | 84 | 151 | 141 | 700 | 78 | 16 |
| | 100.0 | 3.6 | 6.9 | 12.4 | 11.6 | 57.7 | 6.4 | 1.3 |
| First Postdoct. Job | | Present Job | | | | | | |
| Total, All Regions | 10017 | 730 | 1968 | 2487 | 2409 | 1833 | 556 | 34 |
| | 100.0 | 7.3 | 19.6 | 24.9 | 24.1 | 18.3 | 5.5 | .3 |
| New England | 850 | 414 | 116 | 112 | 109 | 75 | 24 | -- |
| | 100.0 | 48.7 | 13.6 | 13.2 | 12.8 | 8.8 | 2.8 | -- |
| Middle Atlantic | 1981 | 102 | 1309 | 196 | 214 | 132 | 27 | 1 |
| | 100.0 | 5.1 | 66.1 | 9.9 | 10.8 | 6.7 | 1.4 | .0 |
| Midwest | 2718 | 89 | 246 | 1699 | 321 | 308 | 55 | -- |
| | 100.0 | 3.3 | 9.0 | 62.5 | 11.8 | 11.3 | 2.0 | -- |
| South | 2289 | 62 | 154 | 263 | 1573 | 185 | 50 | 2 |
| | 100.0 | 2.7 | 6.7 | 11.5 | 68.7 | 8.1 | 2.2 | .1 |
| West | 1459 | 42 | 72 | 133 | 110 | 1071 | 30 | 1 |
| | 100.0 | 2.9 | 4.9 | 9.1 | 7.5 | 73.4 | 2.1 | .1 |
| Foreign | 541 | 11 | 47 | 37 | 41 | 42 | 363 | -- |
| | 100.0 | 2.0 | 8.7 | 6.8 | 7.6 | 7.8 | 67.1 | -- |
| Unknown | 179 | 10 | 24 | 47 | 41 | 20 | 7 | 30 |
| | 100.0 | 5.6 | 13.4 | 26.3 | 22.9 | 11.2 | 3.9 | 16.8 |

Figure 5

Diagram of Inter-regional Flow from Doctorate to First Postdoctoral Job

Relative Sizes of Regions Are Shown as of Doctorate Production
Inter-regional Flows of Less than 100 Are Not Specified



## TABLE 7

## GEOGRAPHIC REGION OF PRESENT JOB

### PERCENT IN EACH REGION

| COHORT | FIELD | TOTAL NO. | TOTAL % | FOREIGN | NEW ENG. | MID. ATL. | MID. WEST | SOUTH | WEST |
|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 9982 | 100.0 | 5.6 | 7.3 | 19.7 | 24.9 | 24.1 | 18.4 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2947 | 100.0 | 3.8 | 7.5 | 21.0 | 25.8 | 25.1 | 16.8 |
| | BIO-SCIENCES, TOTAL | 914 | 99.9 | 3.9 | 5.0 | 19.9 | 27.8 | 25.7 | 17.6 |
| | BASIC MED. SCIENCES | 556 | 100.0 | 2.9 | 4.0 | 21.0 | 30.2 | 24.5 | 17.4 |
| | OTHER BIO-SCIENCES | 358 | 100.1 | 5.6 | 6.7 | 18.2 | 24.0 | 27.7 | 17.9 |
| | MEDICAL SCIENCES | 68 | 100.0 | 4.4 | 4.4 | 22.1 | 25.0 | 23.5 | 20.6 |
| | AGRIC. SCIENCES | 151 | 100.0 | 9.3 | 4.6 | 11.9 | 22.5 | 33.8 | 17.9 |
| | PSYCHOLOGY | 144 | 99.9 | 4.9 | 6.9 | 20.1 | 31.9 | 22.2 | 13.9 |
| | SOCIAL SCIENCES | 501 | 100.0 | 4.6 | 9.8 | 20.2 | 25.9 | 26.3 | 13.2 |
| | MATHEMATICS | 131 | 100.0 | .8 | 9.9 | 12.2 | 22.9 | 26.0 | 28.2 |
| | PHYSICAL SCIENCES | 443 | 100.0 | 3.6 | 7.0 | 24.2 | 20.3 | 23.9 | 21.0 |
| | ENGINEERING | 138 | 99.9 | 3.6 | 13.0 | 27.5 | 21.0 | 22.5 | 12.3 |
| | ALL OTHER FIELDS | 457 | 99.9 | 1.8 | 9.6 | 24.5 | 28.4 | 22.5 | 13.1 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2910 | 100.0 | 4.7 | 7.3 | 19.0 | 25.4 | 23.6 | 20.0 |
| | BIO-SCIENCES,TOTAL | 744 | 100.0 | 5.1 | 5.4 | 19.6 | 25.5 | 23.3 | 21.1 |
| | BASIC MED. SCIENCES | 401 | 100.0 | 3.5 | 4.0 | 24.4 | 28.4 | 20.0 | 19.7 |
| | OTHER BIO-SCIENCES | 343 | 100.0 | 7.0 | 7.0 | 14.0 | 22.2 | 27.1 | 22.7 |
| | MEDICAL SCIENCES | 62 | 100.0 | 4.8 | 6.5 | 30.6 | 25.8 | 22.6 | 9.7 |
| | AGRIC. SCIENCES | 168 | 100.0 | 7.1 | 4.8 | 11.9 | 26.2 | 28.6 | 21.4 |
| | PSYCHOLOGY | 171 | 100.0 | .6 | 9.9 | 15.2 | 31.6 | 23.4 | 19.3 |
| | SOCIAL SCIENCES | 523 | 100.0 | 5.0 | 7.6 | 16.4 | 26.0 | 28.9 | 16.1 |
| | MATHEMATICS | 131 | 100.0 | 3.8 | 10.7 | 19.1 | 32.1 | 12.2 | 22.1 |
| | PHYSICAL SCIENCES | 456 | 100.1 | 4.8 | 8.8 | 17.8 | 18.9 | 24.8 | 25.0 |
| | ENGINEERING | 144 | 100.0 | 4.9 | 10.4 | 25.7 | 22.9 | 14.6 | 21.5 |
| | ALL OTHER FIELDS | 511 | 99.9 | 4.3 | 6.8 | 22.3 | 26.8 | 21.9 | 17.8 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 4125 | 100.0 | 7.4 | 7.2 | 19.3 | 24.0 | 23.8 | 18.3 |
| | BIO-SCIENCES, TOTAL | 1495 | 100.0 | 8.9 | 6.3 | 18.5 | 24.0 | 25.5 | 16.8 |
| | BASIC MED. SCIENCES | 925 | 100.0 | 7.7 | 6.7 | 20.6 | 25.5 | 23.9 | 15.6 |
| | OTHER BIO-SCIENCES | 570 | 100.1 | 10.9 | 5.6 | 15.1 | 21.6 | 28.1 | 18.8 |
| | MEDICAL SCIENCES | 121 | 99.9 | 10.7 | 5.0 | 22.3 | 26.4 | 24.8 | 10.7 |
| | AGRIC. SCIENCES | 217 | 100.1 | 12.4 | 2.8 | 9.7 | 24.0 | 30.0 | 21.2 |
| | PSYCHOLOGY | 153 | 100.0 | 2.6 | 11.1 | 21.6 | 20.9 | 21.6 | 22.2 |
| | SOCIAL SCIENCES | 679 | 100.0 | 6.6 | 7.7 | 18.6 | 25.3 | 26.5 | 15.3 |
| | MATHEMATICS | 196 | 100.0 | 5.6 | 7.7 | 21.9 | 20.4 | 19.4 | 25.0 |
| | PHYSICAL SCIENCES | 460 | 100.0 | 7.6 | 8.5 | 21.1 | 17.6 | 23.5 | 21.7 |
| | ENGINEERING | 181 | 100.0 | 4.4 | 9.9 | 23.8 | 22.1 | 17.1 | 22.7 |
| | ALL OTHER FIELDS | 623 | 100.1 | 5.0 | 7.9 | 20.7 | 29.1 | 18.5 | 18.9 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 2

# RESEARCH AND TEACHING ACTIVITIES

## Distribution of Time

The discovery of new knowledge and the transmission of knowledge to the younger generation--research and teaching--are usually regarded as the primary functions of those who hold the doctorate degree. In the study here reported, each doctorate-holder was asked to estimate the percentage of his time devoted to these two activities, and to administration, and finally, to all other types of activities combined. The analysis of the data of these time distributions leads into many ramifications, but the best overall view of the on-the-job functions of these doctorate-holders may be obtained from the combined data for all fields, and for scientists and scholars in all manner of employment situations, but separated by cohorts. It is found that the distribution of time changes radically with the development of a career, and that with the passage of time the functions performed by each new crop of PhD's change gradually. These changes are depicted graphically in Figure 6, and tabulated numerically in Table 8. In Figure 6, the growth of a career is depicted by means of an analogy to the growth rings on a tree, each successive five-year period being shown as an additional ring. Each ring is divided into the time devoted to teaching, to research, to administration, and to all other functions. The earliest cohort, the graduates of 1935, has the most rings, of course, whereas the latest, 1960, shows only the basic stem--the situation with respect to the first postdoctoral job. In Figure 6, the "present job" rings have been omitted, as they were but slightly different from those for the 1960 job. The full data regarding "present job"--i.e. the job held as of December 1962-- are shown in Table 8, however.

Several trends are worthy of note in Figure 6 and Table 8. The most spectacular is the rapid growth of administrative responsibility, chiefly at the expense of research time. Twenty-five years after the doctorate, administration occupies the greatest single sector of time of the doctorate-holders. Another trend, somewhat more subtle but quite pervasive, is the greater proportion of time each new generation devotes to research, beginning with the first postdoctoral job. And this is primarily at the expense of teaching. The "all other functions" category is relatively stable, and minor in importance as compared to the three primary functions. A third observation, chiefly of historical interest, is the bulge in time devoted to teaching for the 1950 period. This is noteworthy in each of the first three cohorts, and probably represents the extra teaching load that coincided with the "GI" period following World War II. Whether this had a permanent effect on the 1945 graduation cohort is a matter of speculation. But it is clearly observable that this group has retained a larger proportion of time in the teaching category than did either earlier or later cohorts.

When people are separated into groups according to the percentage of time devoted to a particular function--for example teaching--and an examination is made of the time devoted to other functions, it is seen that the overall time-division data discussed above give only a first-approximation picture. To a greater or lesser extent, people tend to specialize and become predominantly teachers, or researchers, or administrators, etc. This process may be viewed by comparing time distribution on the first postdoctoral job with time distribution on the present job. It may also be viewed by correlating, on the present job, the time spent on teaching with that spent on research and that spent on administration. These processes are explored in the next series of tables.

Table 9 shows, in the top half, the relation of the proportion of time spent in teaching to that spent in research and administration. All fields have been combined, but the decade cohorts are shown separately because of the changing job functions observed as careers mature. The rows

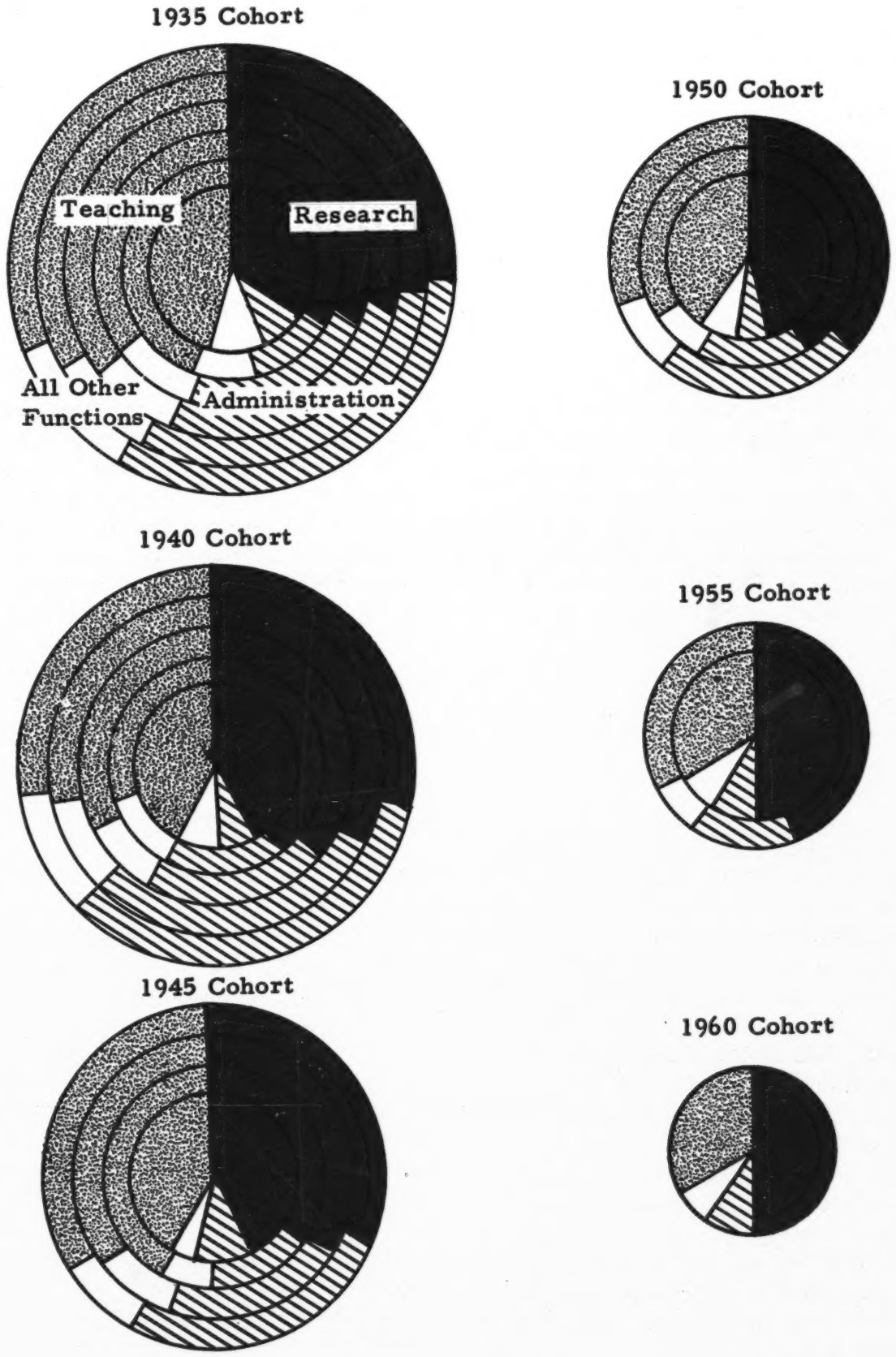
## TABLE 8

**Percentage of Time Devoted to Research, Administration, Teaching, and All Other Functions, by Cohort and by Time Period**

| Work Period | Cohort 1935 | 1940 | 1945 | 1950 | 1955 | 1960 |
|---|---|---|---|---|---|---|
| | | | Percentage of Time Devoted to Teaching | | | |
| 1935 | 46.8 | | | | | |
| 1940 | 44.4 | 42.4 | | | | |
| 1945 | 34.8 | 30.4 | 40.9 | | | |
| 1950 | 35.6 | 32.9 | 41.7 | 40.2 | | |
| 1955 | 33.4 | 28.4 | 35.8 | 34.3 | 34.5 | |
| 1960 | 31.5 | 27.8 | 33.6 | 30.9 | 33.4 | 33.3 |
| 1962 | 31.4 | 27.1 | 33.5 | 28.4 | 30.8 | 33.1 |
| | | | Percentage of Time Devoted to Research | | | |
| 1935 | 35.8 | | | | | |
| 1940 | 33.4 | 41.6 | | | | |
| 1945 | 31.7 | 39.5 | 42.3 | | | |
| 1950 | 28.8 | 36.3 | 35.5 | 45.4 | | |
| 1955 | 27.7 | 32.7 | 34.2 | 41.3 | 48.5 | |
| 1960 | 26.5 | 28.2 | 31.8 | 36.7 | 43.4 | 48.5 |
| 1962 | 26.3 | 28.3 | 30.4 | 33.4 | 41.5 | 46.2 |
| | | | Percentage of Time Devoted to Administration | | | |
| 1935 | 8.1 | | | | | |
| 1940 | 13.7 | 7.5 | | | | |
| 1945 | 23.3 | 17.8 | 11.1 | | | |
| 1950 | 27.5 | 22.1 | 15.6 | 7.3 | | |
| 1955 | 30.0 | 29.5 | 21.6 | 16.1 | 8.5 | |
| 1960 | 32.2 | 34.0 | 26.5 | 23.7 | 15.4 | 10.1 |
| 1962 | 31.9 | 34.8 | 27.1 | 28.7 | 19.8 | 12.5 |
| | | | Percentage of Time Devoted to Other Functions | | | |
| 1935 | 9.3 | | | | | |
| 1940 | 8.5 | 8.5 | | | | |
| 1945 | 10.2 | 12.3 | 5.7 | | | |
| 1950 | 8.1 | 8.6 | 7.2 | 7.1 | | |
| 1955 | 8.9 | 9.4 | 8.4 | 8.3 | 8.6 | |
| 1960 | 9.9 | 10.0 | 8.1 | 8.7 | 7.9 | 8.1 |
| 1962 | 10.4 | 9.9 | 9.1 | 9.5 | 7.9 | 8.3 |

Figure 6

Changing Pattern of On-the-Job Functions with Career Maturation:
Percentage Distribution of Time at Five-Year Intervals Following Graduation



in the top half of Table 9 show the percentage of all doctorate-holders (within decade cohorts) who spent no time in teaching; some time (10 to 29 per cent); a moderate amount of time (30 to 49 per cent); much time (50 to 89 per cent); or practically full time (90 to 100 per cent). For each of these groups, the distribution of time in research is shown in the same five categories on the left side of the page; time spent in administration is shown on the right-hand side of the page. The entries in each cell of this table are the percentages of the total number of cases in each row, rounded to the nearest whole percentage. Because of rounding, percentages may not sum to 100 per cent. In the bottom portion of Table 9, the same people are sorted in rows according to the proportions of their time spent in research, and the total number in each row is distributed according to time spent in teaching (left half) and administration (right half of the table).

With respect to teaching, there are only minor differences among the cohorts in the proportions of the total group spending varying percentages of their time teaching. Roughly one third do no teaching; about one sixth do some, 10 to 29 per cent, teaching; a slightly larger proportion do a moderate amount, 30 to 49 per cent, of teaching; about one quarter of each group do much, 50 to 89 per cent, teaching; about 1 in 14 of each cohort spends practically full time teaching.

The proportion of all cases devoting no time to research is twice as large in the oldest cohort as in the youngest; the proportion devoting full time to research is less than half as large. The proportion devoting a moderate amount of time to research is practically the same for all three cohorts. With respect to administration, the cohort differences are less at the "no administration" end of the scale, but much greater at the full time end. About one third of the oldest cohort devote no time to administration, as compared to half of the youngest cohort. But in the oldest group, the percentage spending practically full time in administration is four times as large as in the youngest cohort.

Table 9 may be examined in more detail, for example, by studying the distribution of time of the "no teaching" group. About half of the oldest cohort who do no teaching also do no research; most of this group are spending nearly full time in administration. With the youngest cohort, those who do no teaching are predominantly spending their time in research--half of them on a practically full time basis. Turning to the bottom portion of Table 9 and the people in the oldest cohort who are sorted into the "no research" group, we see that half of them also do no teaching. Their time is obviously spent chiefly in administration, which occupies the full time of over 40 per cent of this group. The situation is much the same with the middle cohort, although the functions here have not become so highly specialized. In the youngest cohort, about one third do neither research nor teaching; administration is also the major function of this smaller group. Other interrelations of teaching, research, and administration, for those spending varying amounts of time in the teaching and research functions, may be similarly gleaned, although in a somewhat less clear-cut fashion, by examination of the other lines of Table 9.

The process by which these doctorate-holders arrived at their present time distributions may be explored in somewhat more detail by comparing the time distribution on the first postdoctoral job with that on the present job. The first aspect to examine concerns persistence in the same function. This is shown in Tables 10 and 11, which depict persistence in teaching and in research, respectively, for the basic medical sciences and other bio-sciences.

In Table 10, the distribution of time spent in teaching on the first job is shown in the rows; time spent in teaching on the present job is shown in the columns. The same arrangement is used with respect to research in Table 11. In both tables, the diagonal entries have been underlined to emphasize the percentage of doctorate-holders who do not change categories--who devote the same proportion of their time to the same function in both periods. It is noteworthy that these diagonal entries are in general the largest in the table--the number who persist in a given pattern far outnumber those who shift, except for the group that initially spends full time teaching. In comparing Tables 10 and 11, it will be noted that persistence is highest in the teaching function for those who do the least teaching--they persist in the light-teaching-load group once they enter it. With respect to research, persistence in the same functional category is higher for those who do a moderate or large amount of research. These are broader categories, allowing considerable room for change. Yet the process underlying these shifts is significant: the drive toward research and away from teaching, and (not shown directly here) the growth of administrative duties, which take time away principally from research.

TABLE 9

Interrelations of Teaching, Research, and Administration on Present Job, by Decade Cohorts

| Reference Category | Cohort | Total Cases | Percentage of Cases in Each Category of Research Activity | | | | | Percentage of Cases in Each Category of Administrative Activity | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | None | Some[a] | Mod.[a] | Much[a] | Full[a] | None | Some[a] | Mod.[a] | Much[a] | Full[a] |
| Teaching Activity: Total Group | 35-40 | 2616 | 34 | 22 | 19 | 17 | 8 | 33 | 21 | 14 | 18 | 15 |
| | 45-50 | 2686 | 25 | 24 | 20 | 22 | 9 | 35 | 26 | 13 | 16 | 11 |
| | 55-60 | 3888 | 16 | 20 | 18 | 27 | 19 | 50 | 29 | 10 | 8 | 4 |
| Teaching Activity: None | 35-40 | 1010 | 48 | 11 | 7 | 15 | 19 | 27 | 9 | 7 | 21 | 37 |
| | 45-50 | 886 | 36 | 15 | 7 | 19 | 23 | 29 | 13 | 8 | 21 | 30 |
| | 55-60 | 1265 | 16 | 8 | 6 | 20 | 50 | 51 | 17 | 9 | 13 | 9 |
| Teaching Activity: Some[a] | 35-40 | 397 | 14 | 36 | 17 | 25 | 7 | 19 | 22 | 15 | 39 | 5 |
| | 45-50 | 457 | 15 | 27 | 13 | 39 | 6 | 21 | 31 | 11 | 32 | 5 |
| | 55-60 | 612 | 10 | 19 | 9 | 47 | 16 | 36 | 35 | 10 | 16 | 4 |
| Teaching Activity: Mod.[a] | 35-40 | 420 | 11 | 20 | 47 | 23 | | 17 | 28 | 40 | 15 | |
| | 45-50 | 513 | 7 | 18 | 45 | 31 | | 22 | 33 | 32 | 12 | |
| | 55-60 | 685 | 5 | 12 | 34 | 48 | | 36 | 38 | 21 | 6 | |
| Teaching Activity: Much[a] | 35-40 | 584 | 24 | 35 | 28 | 13 | | 44 | 38 | 12 | 6 | |
| | 45-50 | 644 | 15 | 43 | 28 | 14 | | 46 | 42 | 9 | 4 | |
| | 55-60 | 1044 | 13 | 38 | 34 | 17 | | 53 | 38 | 6 | 3 | |
| Teaching Activity: Full[a] | 35-40 | 205 | 80 | 20 | | | | 87 | 13 | | | |
| | 45-50 | 186 | 85 | 15 | | | | 92 | 8 | | | |
| | 55-60 | 282 | 71 | 29 | | | | 91 | 9 | | | |
| | | | Teaching Activity | | | | | Administrative Activity | | | | |
| Research Activity: Total Group | 35-40 | 2616 | 39 | 15 | 16 | 22 | 8 | 33 | 21 | 14 | 18 | 15 |
| | 45-50 | 2686 | 33 | 17 | 19 | 24 | 7 | 35 | 26 | 13 | 16 | 11 |
| | 55-60 | 3888 | 33 | 16 | 18 | 27 | 7 | 50 | 29 | 10 | 8 | 4 |
| Research Activity: None | 35-40 | 883 | 55 | 6 | 5 | 16 | 19 | 29 | 10 | 6 | 14 | 41 |
| | 45-50 | 680 | 47 | 10 | 5 | 14 | 23 | 37 | 9 | 5 | 15 | 35 |
| | 55-60 | 632 | 32 | 10 | 6 | 21 | 32 | 46 | 13 | 8 | 15 | 19 |
| Research Activity: Some[a] | 35-40 | 583 | 19 | 25 | 14 | 35 | 7 | 20 | 26 | 14 | 33 | 6 |
| | 45-50 | 649 | 20 | 19 | 14 | 43 | 4 | 19 | 31 | 15 | 28 | 7 |
| | 55-60 | 774 | 13 | 15 | 11 | 51 | 11 | 32 | 37 | 12 | 16 | 3 |
| Research Activity: Mod[a] | 35-40 | 501 | 14 | 14 | 40 | 33 | | 26 | 26 | 34 | 14 | |
| | 45-50 | 534 | 12 | 11 | 43 | 34 | | 24 | 35 | 29 | 13 | |
| | 55-60 | 714 | 11 | 8 | 33 | 49 | | 36 | 38 | 19 | 7 | |
| Research Activity: Much[a] | 35-40 | 432 | 36 | 23 | 22 | 18 | | 40 | 32 | 13 | 16 | |
| | 45-50 | 593 | 29 | 30 | 27 | 15 | | 41 | 38 | 9 | 12 | |
| | 55-60 | 1035 | 24 | 28 | 32 | 17 | | 49 | 36 | 11 | 5 | |
| Research Activity: Full[a] | 35-40 | 217 | 87 | 13 | | | | 83 | 17 | | | |
| | 45-50 | 230 | 88 | 12 | | | | 87 | 13 | | | |
| | 55-60 | 733 | 87 | 13 | | | | 85 | 15 | | | |

[a] Definitions of Categories of Time Spent in Each Function:
Some = 10%-29% Moderate = 30%-49% Much = 50%-89% Full = 90%-100%

## TABLE 10

### Persistence in Teaching from First Postdoctoral Job to Present Job

**BASIC MEDICAL SCIENCES**

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Percentage of Time Devoted to Teaching on Present Job | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
| Total | N | 1888 | 705 | 387 | 328 | 276 | 48 | 144 |
| | % | 100.0 | 37.3 | 20.5 | 17.4 | 14.6 | 2.5 | 7.6 |
| None | N | 772 | 499 | 113 | 85 | 53 | 11 | 11 |
| | % | 100.0 | 64.6 | 14.6 | 11.0 | 6.9 | 1.4 | 1.4 |
| 10-29% | N | 262 | 49 | 160 | 36 | 8 | 4 | 5 |
| | % | 100.0 | 18.7 | 61.1 | 13.7 | 3.1 | 1.5 | 1.9 |
| 30-49% | N | 172 | 34 | 19 | 96 | 12 | 2 | 9 |
| | % | 100.0 | 19.8 | 11.0 | 55.8 | 7.0 | 1.2 | 5.2 |
| 50-89% | N | 338 | 53 | 47 | 75 | 146 | 6 | 11 |
| | % | 100.0 | 15.7 | 13.9 | 22.2 | 43.2 | 1.8 | 3.3 |
| 90-100% | N | 135 | 29 | 16 | 20 | 40 | 23 | 7 |
| | % | 100.0 | 21.5 | 11.9 | 14.8 | 29.6 | 17.0 | 5.2 |
| Unknown | N | 209 | 41 | 32 | 16 | 17 | 2 | 101 |
| | % | 100.0 | 19.6 | 15.3 | 7.7 | 8.1 | 1.0 | 48.3 |

**OTHER BIO-SCIENCES**

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Percentage of Time Devoted to Teaching on Present Job | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
| Total | N | 1278 | 409 | 208 | 209 | 291 | 98 | 63 |
| | % | 100.0 | 32.0 | 16.3 | 16.4 | 22.8 | 7.7 | 4.9 |
| None | N | 485 | 289 | 71 | 42 | 56 | 21 | 6 |
| | % | 100.0 | 59.6 | 14.6 | 8.7 | 11.5 | 4.3 | 1.2 |
| 10-29% | N | 98 | 15 | 57 | 16 | 8 | | 2 |
| | % | 100.0 | 15.3 | 58.2 | 16.3 | 8.2 | | 2.0 |
| 30-49% | N | 100 | 7 | 19 | 63 | 7 | 2 | 2 |
| | % | 100.0 | 7.0 | 19.0 | 63.0 | 7.0 | 2.0 | 2.0 |
| 50-89% | N | 289 | 41 | 39 | 57 | 137 | 11 | 4 |
| | % | 100.0 | 14.2 | 13.5 | 19.7 | 47.4 | 3.8 | 1.4 |
| 90-100% | N | 195 | 34 | 11 | 16 | 69 | 61 | 4 |
| | % | 100.0 | 17.4 | 5.6 | 8.2 | 35.4 | 31.3 | 2.1 |
| Unknown | N | 111 | 23 | 11 | 15 | 14 | 3 | 45 |
| | % | 100.0 | 20.7 | 9.9 | 13.5 | 12.6 | 2.7 | 40.5 |

TABLE 11

Persistence in Research from First Postdoctoral Job to Present Job

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1888 | 259 | 220 | 305 | 572 | 388 | 144 |
| | % | 100.0 | 13.7 | 11.7 | 16.2 | 30.3 | 20.6 | 7.6 |
| None | N | 184 | 83 | 30 | 24 | 25 | 15 | 7 |
| | % | 100.0 | 45.1 | 16.3 | 13.0 | 13.6 | 8.2 | 3.8 |
| 10-29% | N | 147 | 19 | 61 | 31 | 21 | 7 | 8 |
| | % | 100.0 | 12.9 | 41.5 | 21.1 | 14.3 | 4.8 | 5.4 |
| 30-49% | N | 179 | 25 | 27 | 84 | 25 | 11 | 7 |
| | % | 100.0 | 14.0 | 15.1 | 46.9 | 14.0 | 6.1 | 3.9 |
| 50-89% | N | 477 | 37 | 39 | 80 | 266 | 42 | 13 |
| | % | 100.0 | 7.8 | 8.2 | 16.8 | 55.8 | 8.8 | 2.7 |
| 90-100% | N | 692 | 83 | 40 | 72 | 202 | 287 | 8 |
| | % | 100.0 | 12.0 | 5.8 | 10.4 | 29.2 | 41.5 | 1.2 |
| Unknown | N | 209 | 12 | 23 | 14 | 33 | 26 | 101 |
| | % | 100.0 | 5.7 | 11.0 | 6.7 | 15.8 | 12.4 | 48.3 |

OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1278 | 226 | 210 | 226 | 314 | 239 | 63 |
| | % | 100.0 | 17.7 | 16.4 | 17.7 | 24.6 | 18.7 | 4.9 |
| None | N | 215 | 107 | 30 | 31 | 23 | 21 | 3 |
| | % | 100.0 | 49.8 | 14.0 | 14.4 | 10.7 | 9.8 | 1.4 |
| 10-29% | N | 176 | 30 | 80 | 34 | 22 | 8 | 2 |
| | % | 100.0 | 17.0 | 45.5 | 19.3 | 12.5 | 4.5 | 1.1 |
| 30-49% | N | 138 | 11 | 19 | 83 | 22 | | 3 |
| | % | 100.0 | 8.0 | 13.8 | 60.1 | 15.9 | | 2.2 |
| 50-89% | N | 229 | 19 | 31 | 29 | 124 | 22 | 4 |
| | % | 100.0 | 8.3 | 13.5 | 12.7 | 54.1 | 9.6 | 1.7 |
| 90-100% | N | 409 | 53 | 37 | 35 | 106 | 172 | 6 |
| | % | 100.0 | 13.0 | 9.0 | 8.6 | 25.9 | 42.1 | 1.5 |
| Unknown | N | 111 | 6 | 13 | 14 | 17 | 16 | 45 |
| | % | 100.0 | 5.4 | 11.7 | 12.6 | 15.3 | 14.4 | 40.5 |

The shift from one function to another is shown statistically in Appendix 6, Tables A, B, C, and D. In these tables (omitted here so as not to burden the text) functions on the present job are cross-tabulated with teaching and with research activity on the first post-doctoral job. The general tendency bears out that shown by Tables 10 and 11. A general tendency to remain in the functional role of teacher or researcher results in tabulations in which those who have light teaching loads on the first job have heavy research responsibilities on the present job, and vice versa. The degree of relationship can be roughly appreciated by the fact that contingency coefficients for these cross-tabulations ranged from .53 to .59. Perhaps of more value than the statistical coefficients, however, is examination of the tables themselves.

## Support for Research

One of the more important determiners of the division of time among various functions concerns the support provided, particularly for research. It seemed desirable to explore this question in some detail, with reference to the sources of research support. For many years, the federal government has been supporting scientific research on an increasing scale. In the bio-sciences, the support provided by the Public Health Service has been predominant. It seemed desirable, therefore, to explore the extent to which researchers in the various fields were being supported by funds from the Public Health Service (PHS) and other agencies, both public and private. For this purpose, the group of PhD's who were devoting 50 per cent or more of their time to research were sorted out, and their sources of support analyzed. The results are shown in Table 12.

The total number of researchers in the present sample (defined as those devoting 50 per cent or more of their time to research) is 3240--just about one third of the total group. The proportion is considerably larger in the most recent cohort, as can be seen in Table 12. In this table, the whole research group is divided into two portions: those receiving some or all of their research support from the Public Health Service, and those receiving no support from this source. The former group represents about one fourth of all researchers in all fields combined, increasing from 21.5 per cent in the earliest cohort to 27.9 per cent in the most recent cohort. In the bio-science fields the percentages are much higher, ranging from 36.6 per cent in the earliest cohort to 45.5 per cent in the latest. In the medical sciences the number of researchers is small, but the percentage with PHS support is even higher, particularly in the older cohorts. Of those researchers in the bio-sciences who do receive support from PHS, a large percentage derive all their support from this source, this proportion being almost one third in the oldest cohort and almost half in the youngest group.

Of those not receiving PHS funds for research, a considerable proportion checked no source of support. This may have been a simple oversight. On the other hand, it may reflect varying interpretations of the question. One interpretation, which would seem reasonable to a considerable proportion of people in the humanities fields and some of the social sciences, would be that no support other than a salary and access to a library would be required. It may be noted that in these fields the percentage indicating no source of support is considerably higher than in other fields. Another interpretation might be that one was simply hired to do a research job in a large laboratory, and the question of "support" would not come up in these terms. This interpretation would seem most reasonable in a large developmental laboratory, and it may be noted that in the youngest cohort two thirds of those indicating no research support source are in the engineering field.

Within the physical-science and engineering fields, a rather heavy proportion indicate support only by private sources, and another large proportion indicate support only by public, but not PHS, sources. The proportion in these fields who are receiving support from both public non-PHS sources and private sources is increasing somewhat. In these fields, of course, there are many chemical, electronic, and aerospace firms that employ substantial numbers of research workers; these firms would employ relatively few in the bio-sciences, although the pharmaceutical industry is an exception. For the person interested in studying patterns of research support, a number of other interesting details are to be found in Table 12. Still further breakouts, by five-year cohorts and finer fields, are to be found in Appendix 7.

## TABLE 12

## CATEGORIES OF RESEARCH SUPPORT ON PRESENT JOB

| COHORT | FIELD | TOTAL NO. | TOTAL % | PERCENT OF RESEARCHERS IN EACH SUPPORT CATEGORY: RESEARCH PHS-SUPPORTED — OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH | NOT SUPPORTED BY PHS — OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 3240 | 99.9 | 10.4 | 2.6 | 8.8 | 4.0 | 8.4 | 18.7 | 32.7 | 14.3 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 649 | 99.9 | 6.5 | 1.5 | 9.2 | 4.3 | 10.8 | 21.1 | 35.1 | 11.4 |
| | BIO-SCIENCES, TOTAL | 284 | 100.0 | 11.3 | 2.8 | 16.2 | 6.3 | 5.6 | 15.5 | 31.0 | 11.3 |
| | BASIC MED. SCIENCES | 177 | 100.0 | 13.6 | 3.4 | 18.1 | 7.9 | 7.3 | 11.9 | 30.5 | 7.3 |
| | OTHER BIO-SCIENCES | 107 | 100.1 | 7.5 | 1.9 | 13.1 | 3.7 | 2.8 | 21.5 | 31.8 | 17.8 |
| | MEDICAL SCIENCES | 7 | 100.1 | 14.3 | | 28.6 | 14.3 | 14.3 | 28.6 | | |
| | AGRIC. SCIENCES | 46 | 99.9 | | | 2.2 | 4.3 | 6.5 | 34.8 | 30.4 | 21.7 |
| | PSYCHOLOGY | 20 | 100.0 | 5.0 | | 20.0 | 10.0 | 15.0 | 15.0 | 25.0 | 10.0 |
| | SOCIAL SCIENCES | 87 | 99.8 | 4.6 | | 3.4 | | 24.1 | 17.2 | 42.5 | 8.0 |
| | MATHEMATICS | 21 | 99.9 | | | | | | 57.1 | 23.8 | 19.0 |
| | PHYSICAL SCIENCES | 112 | 100.1 | 1.8 | .9 | 1.8 | 3.6 | 5.4 | 31.3 | 44.6 | 10.7 |
| | ENGINEERING | 25 | 100.0 | | | | 4.0 | 12.0 | 16.0 | 44.0 | 24.0 |
| | ALL OTHER FIELDS | 47 | 100.1 | 4.3 | 2.1 | 4.3 | | 36.2 | 12.8 | 38.3 | 2.1 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 823 | 100.1 | 8.7 | 2.2 | 7.4 | 6.6 | 6.0 | 19.6 | 32.8 | 16.8 |
| | BIO-SCIENCES, TOTAL | 327 | 100.1 | 17.7 | 3.4 | 13.5 | 10.1 | 2.8 | 13.1 | 25.7 | 13.8 |
| | BASIC MED. SCIENCES | 186 | 100.1 | 23.7 | 3.8 | 18.3 | 12.4 | 2.7 | 10.2 | 24.2 | 4.8 |
| | OTHER BIO-SCIENCES | 141 | 99.9 | 9.9 | 2.8 | 7.1 | 7.1 | 2.8 | 17.0 | 27.7 | 25.5 |
| | MEDICAL SCIENCES | 19 | 100.3 | 21.1 | 5.3 | 21.1 | 21.1 | | 5.3 | 21.1 | 5.3 |
| | AGRIC. SCIENCES | 81 | 100.1 | | | 2.5 | 7.4 | 6.2 | 11.1 | 38.3 | 34.6 |
| | PSYCHOLOGY | 36 | 99.9 | 13.9 | 2.8 | 16.7 | 8.3 | 8.3 | 19.4 | 11.1 | 19.4 |
| | SOCIAL SCIENCES | 82 | 99.8 | 2.4 | 1.2 | 2.4 | 2.4 | 13.4 | 12.2 | 52.4 | 13.4 |
| | MATHEMATICS | 41 | 100.0 | | | | 4.9 | 2.4 | 36.6 | 17.1 | 39.0 |
| | PHYSICAL SCIENCES | 161 | 100.1 | 1.9 | 1.9 | 1.9 | 1.2 | 1.9 | 40.4 | 34.8 | 16.1 |
| | ENGINEERING | 28 | 100.0 | | | | 3.6 | 10.7 | 25.0 | 53.6 | 7.1 |
| | ALL OTHER FIELDS | 48 | 100.1 | | 2.1 | | 2.1 | 29.2 | 8.3 | 54.2 | 4.2 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 1768 | 99.9 | 12.6 | 3.2 | 9.3 | 2.8 | 8.7 | 17.4 | 31.7 | 14.2 |
| | BIO-SCIENCES, TOTAL | 902 | 99.8 | 21.2 | 5.5 | 15.7 | 3.4 | 3.3 | 15.3 | 25.9 | 9.5 |
| | BASIC MED. SCIENCES | 597 | 100.1 | 25.8 | 6.4 | 19.8 | 3.0 | 2.8 | 12.4 | 24.0 | 5.9 |
| | OTHER BIO-SCIENCES | 305 | 100.0 | 12.1 | 3.9 | 7.9 | 4.3 | 4.3 | 21.0 | 29.8 | 16.7 |
| | MEDICAL SCIENCES | 36 | 100.0 | 19.4 | | 11.1 | 2.8 | 5.6 | 11.1 | 44.4 | 5.6 |
| | AGRIC. SCIENCES | 131 | 99.9 | 2.3 | | 3.8 | 3.8 | 1.5 | 16.8 | 41.2 | 30.5 |
| | PSYCHOLOGY | 43 | 100.1 | 9.3 | 11.6 | 14.0 | 7.0 | | 25.6 | 23.3 | 9.3 |
| | SOCIAL SCIENCES | 167 | 100.1 | 4.8 | .6 | 3.6 | 1.8 | 15.0 | 10.8 | 46.7 | 16.8 |
| | MATHEMATICS | 82 | 99.9 | 3.7 | | | | 8.5 | 26.8 | 32.9 | 28.0 |
| | PHYSICAL SCIENCES | 257 | 100.1 | 1.6 | | .4 | 1.2 | 3.5 | 30.4 | 41.2 | 21.8 |
| | ENGINEERING | 83 | 100.0 | | | | | 66.3 | 10.8 | 14.5 | 8.4 |
| | ALL OTHER FIELDS | 67 | 100.1 | 4.5 | 1.5 | 1.5 | 4.5 | 35.8 | 9.0 | 35.8 | 7.5 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 3

# SOURCES OF SUPPORT FOR EDUCATION

Support for graduate education has changed considerably over the past generation; the present study furnishes some quantitative information regarding the nature and extent of these changes. Each respondent was asked to indicate the percentage of his total support for graduate education that came from each of several sources: his university, government sources (with the Veterans Administration (VA) listed separately because of its special position in the postwar period), a foundation or health agency, his own earnings, spouse's earnings, parents' contributions, savings, borrowings, and all other sources combined. All of these sources are separately tabulated, by five-year cohorts and finer-field break-outs, in Appendix 8. Figure 7 was drawn from the bio-sciences data of Appendix 8. The fields, cohorts, and sources have been condensed, however, in Table 13 to make the general story easier to follow. The discussion below is based upon both Table 13 and Figure 7.

The striking feature of Figure 7 is the massive impact of the Veterans Administration support on the 1950 cohort, and its tapering off in subsequent cohorts. Actual support was, of course, concentrated in the immediate post-war period, but many of the people so supported did not graduate immediately, so that the graduation cohorts lag behind the time at which this support was maximally effective. Simultaneously with the VA support, relative support from universities and own earnings declined precipitously; other changes were somewhat more gradual, but nevertheless profound. The change in the relative contributions from these several sources is perhaps best viewed against the background of the overall support for all cohorts combined, in all fields, as shown in the top line of Table 13. Here it is seen that overall, fellowships, scholarships, assistantships, and traineeships from university sources accounted for slightly over one third of the total graduate support. Somewhat over one fourth was accounted for by the individuals' own resources (earnings, borrowings, savings), and one seventh by family resources.

It is noteworthy that in the most recent cohorts the relative support from university sources has increased somewhat from its low point at the time of the VA maximum. In view of the lag mentioned above, this increase may be greater in recent years than shows on the chart or in the tables. There is, however, a possible confusion of sources here, with the proliferation of government programs. That is, some money reported as coming from universities may be traineeships actually funded by the federal government, but not so perceived or so remembered by the recipient. The massive growth in federal support is striking both in Table 13, which covers all fields, and in Figure 7, which reflects the bio-sciences only. In the bio-sciences, the support provided by government agencies other than the VA more than triples from decade to decade, rising from 1.2 per cent in the 1935-40 cohort to 4.4 per cent in the 1945-50 cohort and to 13.7 per cent in the 1955-60 cohort. And again it should be noted that these increases probably understate the case, as they are periods of graduation, not periods of support. In psychology, the growth of support from non-VA governmental sources is even more striking, moving up from one tenth of 1 per cent in the first decade to 10.6 per cent in the postwar era and on to 16.3 per cent in the latest decade. A large part of the immediate postwar support in this field was from the Public Health Service for clinical psychology, a field in which personnel shortages were made dramatically evident by the impact of combat conditions. In the later periods, support for the non-clinical fields in psychology has come also from the National Science Foundation.

Tying with psychology at 16.3 per cent in the most recent decade is the field of the physical sciences, in which support from the National Science Foundation has been highly important. The Foundation only began operations in 1950; its impact was therefore not felt at all until the 1955 cohort, and undoubtedly was greatly enlarged in the 1960 cohort. A field that does not follow the trend of the other sciences is agriculture; it received, in the

## TABLE 13

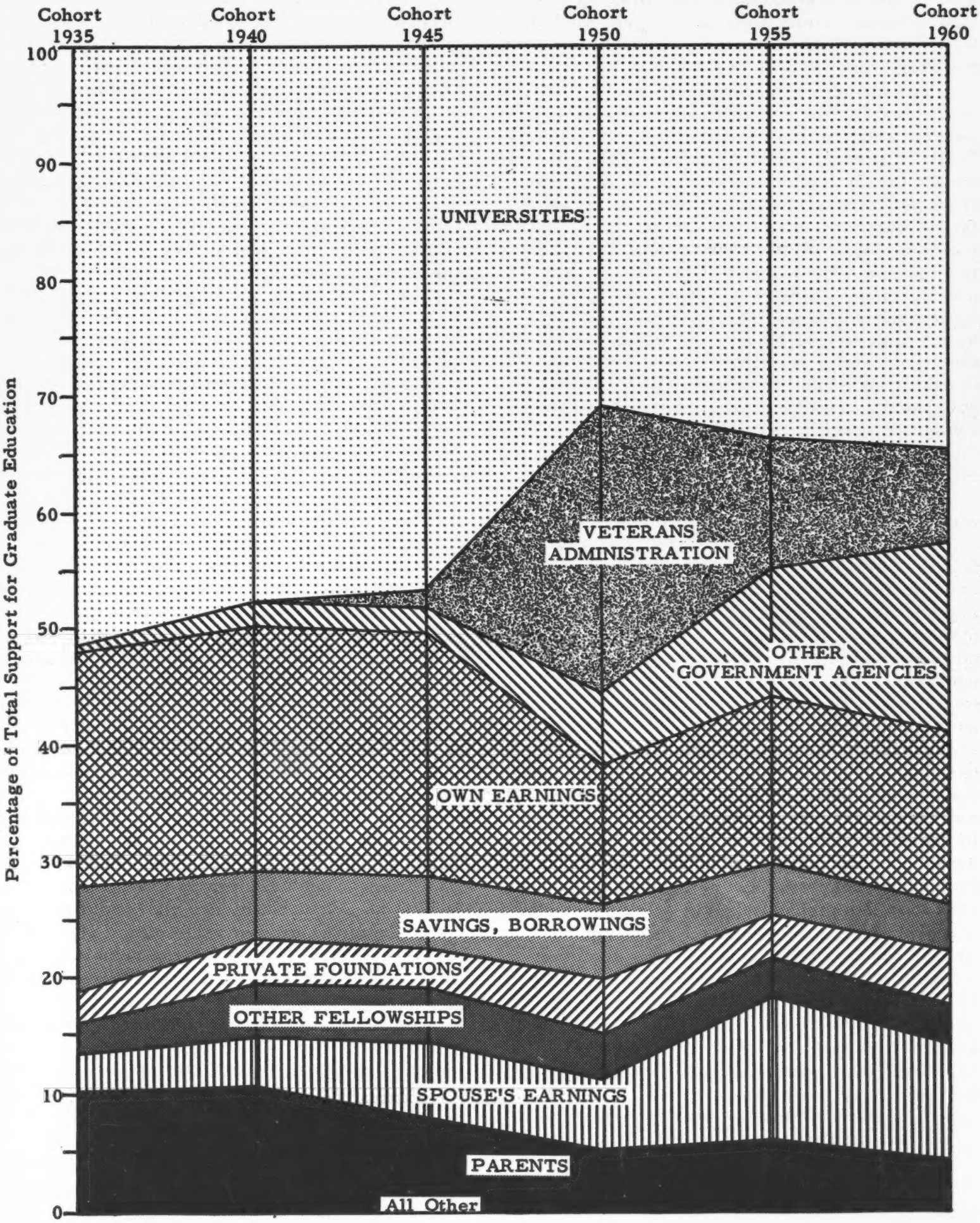
## SOURCES OF SUPPORT FOR GRADUATE EDUCATION

| COHORT | FIELD | TOTAL NO. | TOTAL % | PERCENT OF TOTAL SUPPORT FROM EACH SOURCE: UNIV | V.A. | OTHER GOVT | MISC PRIV | FAM-ILY | OWN, MISC | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 9576 | 100.0 | 34.8 | 8.7 | 5.5 | 6.1 | 14.4 | 28.8 | 1.7 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2815 | 100.0 | 41.6 | .1 | .7 | 5.1 | 15.2 | 35.5 | 1.8 |
| | BIO-SCIENCES, TOTAL | 885 | 100.1 | 49.3 | .2 | 1.2 | 7.2 | 13.3 | 27.7 | 1.2 |
| | BASIC MED. SCIENCES | 532 | 100.1 | 48.0 | .2 | 1.1 | 9.5 | 13.9 | 26.5 | .9 |
| | OTHER BIO-SCIENCES | 353 | 99.9 | 51.2 | .1 | 1.4 | 3.8 | 12.3 | 29.5 | 1.6 |
| | MEDICAL SCIENCES | 62 | 100.1 | 22.4 | | .2 | 17.1 | 22.1 | 38.1 | .2 |
| | AGRIC. SCIENCES | 144 | 99.9 | 48.5 | | 3.1 | 7.0 | 7.6 | 33.5 | .2 |
| | PSYCHOLOGY | 137 | 100.0 | 39.8 | | .1 | 3.6 | 17.4 | 36.8 | 2.3 |
| | SOCIAL SCIENCES | 473 | 100.0 | 32.8 | .1 | .2 | 3.8 | 17.7 | 42.3 | 3.1 |
| | MATHEMATICS | 127 | 100.6 | 52.6 | | .2 | 1.4 | 12.2 | 30.9 | 3.3 |
| | PHYSICAL SCIENCES | 437 | 100.0 | 49.0 | .1 | .4 | 3.4 | 17.6 | 28.8 | .7 |
| | ENGINEERING | 132 | 100.1 | 37.2 | | 1.0 | 8.0 | 13.8 | 40.1 | |
| | ALL OTHER FIELDS | 418 | 100.0 | 26.9 | .1 | .3 | 2.4 | 15.9 | 51.1 | 3.3 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2827 | 100.0 | 32.8 | 13.6 | 4.2 | 6.0 | 12.2 | 29.2 | 2.0 |
| | BIO-SCIENCES, TOTAL | 723 | 100.0 | 37.8 | 14.7 | 4.4 | 8.5 | 11.4 | 22.1 | 1.1 |
| | BASIC MED. SCIENCES | 385 | 100.0 | 34.6 | 16.0 | 5.8 | 10.9 | 10.5 | 21.4 | .8 |
| | OTHER BIO-SCIENCES | 338 | 100.0 | 41.4 | 13.2 | 2.8 | 5.7 | 12.5 | 23.0 | 1.4 |
| | MEDICAL SCIENCES | 59 | 99.9 | 26.1 | 4.4 | 12.7 | 11.7 | 16.6 | 28.1 | .3 |
| | AGRIC. SCIENCES | 167 | 100.0 | 40.0 | 15.9 | 2.9 | 10.8 | 8.7 | 20.2 | 1.5 |
| | PSYCHOLOGY | 165 | 100.0 | 29.3 | 15.8 | 10.6 | 1.3 | 16.6 | 24.7 | 1.7 |
| | SOCIAL SCIENCES | 506 | 100.1 | 29.2 | 14.5 | .9 | 4.5 | 14.1 | 34.8 | 2.1 |
| | MATHEMATICS | 129 | 100.0 | 40.4 | 13.1 | 5.0 | 1.5 | 11.3 | 26.8 | 1.9 |
| | PHYSICAL SCIENCES | 449 | 100.0 | 38.5 | 13.3 | 6.9 | 5.4 | 11.4 | 23.7 | .8 |
| | ENGINEERING | 139 | 99.9 | 33.0 | 12.4 | 8.6 | 9.8 | 7.6 | 28.1 | .4 |
| | ALL OTHER FIELDS | 490 | 100.0 | 21.1 | 11.4 | .7 | 4.0 | 13.0 | 44.3 | 5.5 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 3934 | 100.0 | 31.3 | 11.4 | 9.8 | 6.8 | 15.5 | 23.8 | 1.4 |
| | BIO-SCIENCES, TOTAL | 1458 | 100.1 | 34.8 | 9.1 | 13.7 | 7.7 | 15.1 | 18.7 | 1.0 |
| | BASIC MED. SCIENCES | 901 | 99.9 | 31.9 | 8.8 | 15.3 | 8.3 | 15.2 | 19.4 | 1.0 |
| | OTHER BIO-SCIENCES | 557 | 100.1 | 39.6 | 9.4 | 11.1 | 6.7 | 14.9 | 17.4 | 1.0 |
| | MEDICAL SCIENCES | 115 | 100.0 | 26.2 | 3.4 | 14.5 | 14.3 | 14.6 | 27.0 | |
| | AGRIC. SCIENCES | 214 | 100.1 | 40.7 | 13.9 | 4.3 | 8.7 | 13.5 | 18.4 | .6 |
| | PSYCHOLOGY | 152 | 100.1 | 22.6 | 12.6 | 16.3 | 3.7 | 17.9 | 26.9 | .1 |
| | SOCIAL SCIENCES | 666 | 100.1 | 27.6 | 15.8 | 2.0 | 5.8 | 17.6 | 29.5 | 1.8 |
| | MATHEMATICS | 190 | 99.9 | 37.8 | 10.9 | 12.8 | 2.8 | 12.6 | 21.9 | 1.1 |
| | PHYSICAL SCIENCES | 456 | 100.1 | 34.1 | 9.0 | 16.3 | 8.5 | 14.9 | 16.6 | .7 |
| | ENGINEERING | 86 | 99.9 | 34.3 | 7.4 | 11.4 | 10.9 | 11.4 | 24.2 | .3 |
| | ALL OTHER FIELDS | 597 | 100.0 | 21.9 | 14.9 | 2.3 | 4.0 | 16.3 | 36.9 | 3.7 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 7

Changing Sources of Support for Graduate Education in the Bio-Sciences



three decade cohorts, 3.1 per cent, 2.9 per cent, and 4.3 per cent, respectively, from non-VA governmental sources. In this field, support from family sources (largely working wives) meanwhile increased sharply, nearly doubling from 1945-50 to 1955-60.

The change in support from family sources is of considerable interest. The total from parents and spouses has not changed drastically over the several cohorts, except for the decline during the GI period. However, the proportion from parents has declined rather steadily, and the proportion from working wives has increased, most notably from the 1950 to the 1955 cohort in Figure 7. The support from the students' own earnings has not come back to its prewar figure; the combined total from savings and borrowings has declined gradually throughout the six decades. Relative support from private foundations and fellowships from other than government and university sources has not changed markedly in the bio-sciences or in the total of all fields, although there have been some significant changes within individual fields.

The field differences in Table 13 are noteworthy. They are chiefly accounted for in terms of sciences versus non-sciences; it is apparent that the "all other" fields have less support from both government and universities than have the science fields; the social sciences are intermediate between the natural sciences and "all others," which include the humanities and education. Educators particularly have had to depend on their own resources, principally current earnings, but also including borrowings and savings. The typical pattern in education has been, of course, for teachers to spend some time on the job before going on to graduate school, and then to acquire graduate credits year by year in summer school while working during the academic year on regular teaching jobs. In the last two 5-year cohorts, the university support of education has picked up again from a low of 8 per cent, but it remains the least-supported field in the current survey. Among the other fields, the bio-sciences and medical sciences have received most support from private sources, chiefly the private health-related foundations. Engineering has also been relatively well supported by private sources other than one's own or family resouces.

Education beyond the doctorate has had a long and distinguished history. The National Research Council postdoctoral fellowships began in the 1920's with funds provided by the Rockefeller Foundation. Following this lead, other sources of support developed, particularly in the post-World War II period. Table 14 summarizes the sources of support for postdoctoral fellowships enjoyed by the participants in the present study. There were 1626 people in all with such fellowships, approximately one sixth of the total group. About one fourth of these fellowships were provided by universities, and about one fourth by private foundations and health agencies (in Table 14 combined under the title "Priv. Fdn."). Most of the remainder were provided by the U.S. government, with the Public Health Service and National Science Foundation outstanding in this category. The support by government agencies has been expanded greatly in recent years, but does not include some people from earlier cohorts who may only recently have held postdoctoral fellowships. In the earliest five-year cohort, universities furnished 50 per cent of the support then available, and private foundations 30 per cent. Since that time, the proportionate support by universities has declined to 14 per cent, that of private foundations to 11 per cent in the most recent five-year cohort, while the PHS percentage has risen from 2 per cent to 40 per cent, and the NSF percentage from 1 per cent to 15 per cent. These changes in relative support must be viewed against a background of sharply rising total numbers. Thus the universities and private foundations have decreased their support much less in total numbers of awards than these percentages would seem to indicate; government support, by a variety of agencies, has greatly expanded the total number of people so supported, and only to a limited extent has supplanted the earlier sources. The numbers of cases in each five-year cohort supported by each source are given in fine-field detail in Appendix 9.

The length of postdoctoral fellowships has has not changed markedly over the years covered by the present survey. Half of all the postdoctoral fellowships are for one calendar year; one sixth are for two years; about 10 per cent are for a summer term only; about 12 per cent for an academic year; the remainder are for varying periods. Appendix 10 provides the detail regarding length of fellowships.

About one fourth of postdoctoral fellowship-holders also held a second such fellowship. The sources of these second fellowships did not vary greatly from those of the first, except for somewhat greater dependence on private-foundation sources. The sources of support for the second postdoctoral fellowships are shown in Table 15. Here the importance of private health-agency and foundation sources is apparent. Almost half

of the support comes from this source in the oldest cohort. In the second and third cohorts, this source diminishes. Federal agencies other than PHS and NSF come up in the 1945-50 cohort, but drop off in the youngest cohort. A caution is in order with regard to Table 15: The numbers of cases are small in individual fields, making it easy to over-interpret percentage differences.

More detailed data with regard to sources of support for postdoctoral fellowships, and duration of such fellowships, are to be found in Appendix 9 and Appendix 10. It may be noted, in comparing these two appendixes, that the number of fellowships shown in Appendix 9 is 1626, while in Appendix 10 it is 1679. The discrepancy is accounted for by the "unknown" category, which is omitted in these tables. The size of this category varied slightly for the two sets of data. Each table as it stands is correct, however, for the information it encompasses.

Postdoctoral fellowships are not a clearly-defined entity, and the tables here must reflect some of the ambiguity surrounding this term. However, the number of different types of postdoctoral support has perhaps increased in the most recent years beyond what is shown in the tables of this report. Postdoctoral research associateships, and stipends provided by training grants furnished by the National Institutes of Health, are two examples. Another is direct employment on federally-supported research projects for a period of a year or two. Here the term "fellowship" is sometimes erroneously applied, at least apart from formal contractural documents. "Teaching fellow" is another term that implies a training situation, but that may in some instances be little different from an instructorship. Regardless of the terminology, however, it is apparent that a great deal more attention is being given, and support provided, for education beyond the doctorate in recent years, as compared to the earlier decades covered in the present report.

TABLE 14

SOURCES OF SUPPORT, IN PERCENTAGE, FOR FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | TOTAL NO. | TOTAL % | UNIV | PHS | NSF | OTHR FED. | IND, BUS. | PRIV FDN. | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 1626 | 100.0 | 25.8 | 18.0 | 9.2 | 12.7 | 4.5 | 25.9 | 3.9 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 419 | 100.0 | 43.0 | 2.1 | 2.6 | 9.8 | 8.6 | 31.5 | 2.4 |
| | BIO-SCIENCES, TOTAL | 167 | 100.0 | 41.3 | 4.2 | 3.6 | 4.8 | 10.2 | 34.1 | 1.8 |
| | BASIC MED. SCIENCES | 110 | 99.9 | 40.0 | 2.7 | .9 | 4.5 | 14.5 | 35.5 | 1.8 |
| | OTHER BIO-SCIENCES | 57 | 100.2 | 43.9 | 7.0 | 8.8 | 5.3 | 1.8 | 31.6 | 1.8 |
| | MEDICAL SCIENCES | 6 | 100.0 | 33.3 | 16.7 | | | | 50.0 | |
| | AGRIC. SCIENCES | 9 | 100.0 | 55.6 | | | 11.1 | 33.3 | | |
| | PSYCHOLOGY | 16 | 100.0 | 62.5 | | | 12.5 | | 25.0 | |
| | SOCIAL SCIENCES | 77 | 100.0 | 51.9 | | | 15.6 | 5.2 | 24.7 | 2.6 |
| | MATHEMATICS | 24 | 100.1 | 45.8 | | 16.7 | 16.7 | 4.2 | 16.7 | |
| | PHYSICAL SCIENCES | 50 | 100.0 | 42.0 | 2.0 | 2.0 | 6.0 | 18.0 | 28.0 | 2.0 |
| | ENGINEERING | 4 | 100.0 | | | | | 50.0 | 50.0 | |
| | ALL OTHER FIELDS | 66 | 100.0 | 33.3 | | | 16.7 | | 43.9 | 6.1 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 498 | 99.9 | 26.5 | 9.4 | 7.8 | 16.1 | 3.8 | 32.7 | 3.6 |
| | BIO-SCIENCES, TOTAL | 147 | 100.0 | 21.8 | 22.4 | 11.6 | 4.1 | 6.8 | 27.2 | 6.1 |
| | BASIC MED. SCIENCES | 75 | 100.0 | 13.3 | 24.0 | 6.7 | 5.3 | 10.7 | 34.7 | 5.3 |
| | OTHER BIO-SCIENCES | 72 | 100.0 | 30.6 | 20.8 | 16.7 | 2.8 | 2.8 | 19.4 | 6.9 |
| | MEDICAL SCIENCES | 8 | 100.0 | 50.0 | 37.5 | | 12.5 | | | |
| | AGRIC SCIENCES | 13 | 100.1 | 38.5 | | 7.7 | 15.4 | 7.7 | 23.1 | 7.7 |
| | PSYCHOLOGY | 20 | 100.0 | 20.0 | 25.0 | 5.0 | 10.0 | | 40.0 | |
| | SOCIAL SCIENCES | 111 | 99.9 | 30.6 | .9 | | 18.9 | 1.8 | 45.0 | 2.7 |
| | MATHEMATICS | 34 | 100.0 | 41.2 | | 23.5 | 20.6 | | 14.7 | |
| | PHYSICAL SCIENCES | 70 | 100.0 | 25.7 | 4.3 | 11.4 | 24.3 | 5.7 | 25.7 | 2.9 |
| | ENGINEERING | 11 | 100.1 | | 9.1 | 36.4 | 36.4 | 9.1 | 9.1 | |
| | ALL OTHER FIELDS | 84 | 100.0 | 25.0 | 1.2 | | 23.8 | 1.2 | 45.2 | 3.6 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 709 | 100.0 | 15.1 | 33.4 | 14.1 | 12.0 | 2.5 | 17.8 | 5.1 |
| | BIO-SCIENCES, TOTAL | 400 | 100.1 | 9.0 | 53.0 | 12.3 | 6.0 | 2.0 | 14.0 | 3.8 |
| | BASIC MED. SCIENCES | 279 | 100.0 | 9.7 | 55.9 | 10.4 | 6.1 | 2.5 | 12.9 | 2.5 |
| | OTHER BIO-SCIENCES | 121 | 99.9 | 7.4 | 46.3 | 16.5 | 5.8 | .8 | 16.5 | 6.6 |
| | MEDICAL SCIENCES | 11 | 100.0 | 27.3 | 63.6 | 9.1 | | | | |
| | AGRIC. SCIENCES | 18 | 100.1 | 16.7 | 11.1 | 16.7 | 27.8 | 11.1 | 16.7 | |
| | PSYCHOLOGY | 18 | 100.1 | 5.6 | 55.6 | 16.7 | 22.2 | | | |
| | SOCIAL SCIENCES | 110 | 99.9 | 34.5 | 1.8 | 3.6 | 10.9 | 4.5 | 36.4 | 8.2 |
| | MATHEMATICS | 34 | 99.9 | 17.6 | 2.9 | 44.1 | 14.7 | | 8.8 | 11.8 |
| | PHYSICAL SCIENCES | 70 | 100.0 | 18.6 | 4.3 | 28.6 | 27.1 | 4.3 | 7.1 | 10.0 |
| | ENGINEERING | 6 | 100.0 | | | 33.3 | 66.7 | | | |
| | ALL OTHER FIELDS | 42 | 100.0 | 16.7 | | 7.1 | 28.6 | | 45.2 | 2.4 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING

## TABLE 15

## SOURCES OF SUPPORT, IN PERCENTAGE, FOR SECOND POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | TOTAL NUMBER | TOTAL PERCENT | UNIV | PHS | NSF | OTHR FED. | IND, BUS. | PRIV FDN. | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 414 | 99.9 | 20.5 | 16.4 | 10.1 | 15.0 | 3.1 | 32.9 | 1.9 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 122 | 100.0 | 26.2 | 3.3 | 7.4 | 12.3 | 2.5 | 46.7 | 1.6 |
| | BIO-SCIENCES, TOTAL | 43 | 100.2 | 23.3 | 7.0 | 7.0 | 7.0 | 4.7 | 51.2 | |
| | BASIC MED. SCIENCES | 29 | 99.9 | 24.1 | 10.3 | 6.9 | 3.4 | 6.9 | 48.3 | |
| | OTHER BIO-SCIENCES | 14 | 99.9 | 21.4 | | 7.1 | 14.3 | | 57.1 | |
| | MEDICAL SCIENCES | | | | | | | | | |
| | AGRIC. SCIENCES | 1 | 100.0 | 100.0 | | | | | | |
| | PSYCHOLOGY | 3 | 99.9 | | | 33.3 | 33.3 | 33.3 | | |
| | SOCIAL SCIENCES | 23 | 99.9 | 34.8 | | | 4.3 | | 56.5 | 4.3 |
| | MATHEMATICS | 9 | 99.9 | 22.2 | | 33.3 | 11.1 | | 33.3 | |
| | PHYSICAL SCIENCES | 17 | 100.0 | 23.5 | 5.9 | 5.9 | 29.4 | | 29.4 | 5.9 |
| | ENGINEERING | 1 | 100.0 | | | | | | 100.0 | |
| | ALL OTHER FIELDS | 25 | 100.0 | 28.0 | | 4.0 | 16.0 | | 52.0 | |
| COHORT 45-50 | TOTAL, ALL FIELDS | 140 | 100.0 | 19.3 | 6.4 | 11.4 | 23.6 | 2.9 | 34.3 | 2.1 |
| | BIO-SCIENCES, TOTAL | 38 | 100.0 | 18.4 | 13.2 | 18.4 | 21.1 | | 26.3 | 2.6 |
| | BASIC MED. SCIENCES | 16 | 100.1 | 25.0 | 12.5 | 6.3 | 18.8 | | 37.5 | |
| | OTHER BIO-SCIENCES | 22 | 99.9 | 13.6 | 13.6 | 27.3 | 22.7 | | 18.2 | 4.5 |
| | MEDICAL SCIENCES | 2 | 100.0 | | | | 50.0 | | 50.0 | |
| | AGRIC. SCIENCES | 5 | 100.0 | | | | 60.0 | 20.0 | 20.0 | |
| | PSYCHOLOGY | 7 | 100.0 | | 28.6 | | 14.3 | | 57.1 | |
| | SOCIAL SCIENCES | 35 | 100.0 | 31.4 | 2.9 | 2.9 | 25.7 | | 37.1 | |
| | MATHEMATICS | 14 | 99.9 | 14.3 | | 35.7 | 7.1 | 7.1 | 35.7 | |
| | PHYSICAL SCIENCES | 14 | 99.9 | 14.3 | | 21.4 | 28.6 | 7.1 | 21.4 | 7.1 |
| | ENGINEERING | 3 | 100.0 | | 33.3 | | 66.7 | | | |
| | ALL OTHER FIELDS | 22 | 99.9 | 22.7 | | | 18.2 | 4.5 | 50.0 | 4.5 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 152 | 100.0 | 17.1 | 36.2 | 11.2 | 9.2 | 3.9 | 20.4 | 2.0 |
| | BIO-SCIENCES, TOTAL | 96 | 100.0 | 12.5 | 53.1 | 12.5 | 4.2 | 2.1 | 13.5 | 2.1 |
| | BASIC MED. SCIENCES | 69 | 99.9 | 8.7 | 60.9 | 8.7 | 4.3 | 1.4 | 14.5 | 1.4 |
| | OTHER BIO-SCIENCES | 27 | 99.9 | 22.2 | 33.3 | 22.2 | 3.7 | 3.7 | 11.1 | 3.7 |
| | MEDICAL SCIENCES | 2 | 100.0 | | 50.0 | | 50.0 | | | |
| | AGRIC. SCIENCES | 3 | 99.9 | 33.3 | 33.3 | | | | 33.3 | |
| | PSYCHOLOGY | | | | | | | | | |
| | SOCIAL SCIENCES | 26 | 100.0 | 34.6 | | | 23.1 | 11.5 | 30.8 | |
| | MATHEMATICS | 5 | 100.0 | 20.0 | | 20.0 | 20.0 | | 40.0 | |
| | PHYSICAL SCIENCES | 11 | 100.1 | 18.2 | 18.2 | 27.3 | | 9.1 | 18.2 | 9.1 |
| | ENGINEERING | 1 | 100.0 | | | | 100.0 | | | |
| | ALL OTHER FIELDS | 8 | 100.0 | 12.5 | | 12.5 | 12.5 | | 62.5 | |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 4

# SOCIAL MOBILITY

What are the origins of doctorate-holders, in terms of the occupational categories of their fathers and the educational levels of their fathers and mothers? This question can be answered in a rough way from general observation: the educational level of the parents of doctorate-holders (or graduate students in general) is quite apparently above the educational level of the general population. Likewise, the large number of professional people among the parents of doctorate-holders has been frequently noted. But what is needed is a quantitative assessment of this relationship, and information as to whether the quantitative index is changing, and in what direction. To make this assessment, each person queried in this study was asked to check the occupational level of his father (in broad categories) and to give the educational level of both his parents. The resulting statistics were compared with comparable age-specific statistics from the U.S. census, to provide a normative frame based on the contemporaries of the parents of the doctorate-holders of each cohort. The assumption was made, in this connection, that the average generation was 30 years and that, on the average, the doctorate degrees were granted at the age of 30. The latter is approximately true for doctorates of recent years; any disparity between these assumptions and the actual facts would change the statistics slightly, but would have no appreciable effect on the general direction of the results.

Table 16 provides the necessary information regarding the educational attainment of the fathers of the doctorate-holders in the present sample, by major fields and decade cohorts. Table 17 provides similar information with respect to the mothers of these same people. More detailed data, by five-year cohorts, finer-field break-outs, and more detailed educational levels, are provided in Appendix 11 and Appendix 12. There are some interesting field differences that tend to persist from one cohort to the next. The most important finding, however, is that there is so little change, taking the whole group together, from cohort to cohort, in the distribution of educational levels of the parents. The data regarding education of fathers, taken from Appendix 11, is shown graphically in Figure 8. Here the constancy is quite apparent to visual inspection. The percentage with only grade school education declines somewhat from the earlier to the later cohorts, but at the level of high school graduate and beyond, the fluctuations are small and unsystematic; no general time trend is shown. For comparison, the corresponding statistics taken from U.S. census data for 1950 and 1960, for persons in general in the population of ages estimated to be equal to those of the fathers of the doctorates of each successive cohort, are shown graphically in Figure 9. Here a very marked trend is evident, due to the rise in the educational level of the population during the final quarter of the last century. The rise has continued, of course, but this continuation is not shown here, as no substantial number of doctorate-holders in the present study are among the children of people born in 1905 or later.

In comparing Figures 8 and 9, the second striking feature is that the parents of the doctorate-holders are far better educated than those of the general population, even for the most recent cohort shown. The median educational level of the birth cohort of 1900 is slightly short of 8th grade; the doctorate-holders of 1960 were born of parents whose median educational level was high school graduation. Among males in the general population, fewer than 1 in 10 of the latest age group had a college education, as compared with more than 1 in 4 of the fathers of doctorate-holders. At the level of graduate education, the disparity is approximately 5 to 1 for the latest cohort; it was 15 to 1 for the oldest.

An interesting line of speculation is opened, if one assumes that the trends shown in Figures 8 and 9 are to continue. If there were to be no change in the educational distribution of parents of doctorate-holders, while that of the general population continued to rise, the graphs would eventually intersect. At that point the growth of the doctorate population, as a percentage

## TABLE 16

## EDUCATION OF FATHER

| COHORT | FIELD | TOTAL NO. | TOTAL % | PERCENT TERMINATING AT EACH LEVEL: NONE | GR. 1-8 | GR. 9-11 | H.S. GRAD | COLL I-3 | COLL GRAD | GRAD SCH. | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10017 | 100.0 | 2.1 | 31.1 | 9.3 | 16.1 | 11.1 | 13.6 | 13.3 | 3.4 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2965 | 100.0 | 2.3 | 32.3 | 8.1 | 15.1 | 11.0 | 12.4 | 13.8 | 5.0 |
| | BIO-SCIENCES. TOTAL | 922 | 100.0 | 2.7 | 36.1 | 7.2 | 16.1 | 9.2 | 11.9 | 12.1 | 4.7 |
| | BASIC MED. SCIENCES | 559 | 100.1 | 3.0 | 36.0 | 7.5 | 15.6 | 7.9 | 13.1 | 11.6 | 5.4 |
| | OTHER BIO-SCIENCES | 363 | 100.0 | 2.2 | 36.4 | 6.6 | 16.8 | 11.3 | 10.2 | 12.9 | 3.6 |
| | MEDICAL SCIENCES | 70 | 100.1 | 2.9 | 22.9 | 5.7 | 14.3 | 8.6 | 5.7 | 24.3 | 15.7 |
| | AGRIC. SCIENCES | 151 | 99.9 | 2.0 | 50.3 | 9.9 | 11.9 | 6.6 | 4.6 | 11.3 | 3.3 |
| | PSYCHOLOGY | 144 | 100.1 | .7 | 26.4 | 4.2 | 14.6 | 16.0 | 10.4 | 24.3 | 3.5 |
| | SOCIAL SCIENCES | 506 | 100.0 | 2.4 | 27.5 | 7.9 | 13.0 | 11.7 | 17.4 | 14.6 | 5.5 |
| | MATHEMATICS | 131 | 100.0 | 3.1 | 36.6 | 5.3 | 17.6 | 12.2 | 11.5 | 9.9 | 3.8 |
| | PHYSICAL SCIENCES | 444 | 100.1 | 1.4 | 26.6 | 9.9 | 16.2 | 12.4 | 13.5 | 17.6 | 2.5 |
| | ENGINEERING | 138 | 99.9 | 1.4 | 34.1 | 10.9 | 18.8 | 15.2 | 6.5 | 9.4 | 3.6 |
| | ALL OTHER FIELDS | 459 | 100.0 | 2.8 | 31.4 | 9.2 | 13.7 | 10.9 | 13.3 | 11.1 | 7.6 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2916 | 100.0 | 1.9 | 32.0 | 9.2 | 15.4 | 11.0 | 13.6 | 13.8 | 3.1 |
| | BIO-SCIENCES, TOTAL | 746 | 99.8 | 2.5 | 33.6 | 10.7 | 17.4 | 9.9 | 9.5 | 12.7 | 3.5 |
| | BASIC MED. SCIENCES | 402 | 100.1 | 4.0 | 33.1 | 9.7 | 19.2 | 9.0 | 9.0 | 11.9 | 4.2 |
| | OTHER BIO-SCIENCES | 344 | 100.0 | .9 | 34.3 | 11.9 | 15.4 | 11.0 | 10.2 | 13.7 | 2.6 |
| | MEDICAL SCIENCES | 63 | 100.0 | 1.6 | 17.5 | 6.3 | 15.9 | 9.5 | 14.3 | 28.6 | 6.3 |
| | AGRIC. SCIENCES | 168 | 100.0 | 1.2 | 47.6 | 6.0 | 14.9 | 12.5 | 7.7 | 8.9 | 1.2 |
| | PSYCHOLOGY | 171 | 99.9 | 2.3 | 37.4 | 9.9 | 13.5 | 10.5 | 9.9 | 11.7 | 4.7 |
| | SOCIAL SCIENCES | 524 | 100.0 | 1.7 | 32.1 | 8.8 | 13.5 | 12.8 | 16.2 | 12.2 | 2.7 |
| | MATHEMATICS | 131 | 100.1 | 2.3 | 29.0 | 9.9 | 13.0 | 9.9 | 15.3 | 17.6 | 3.1 |
| | PHYSICAL SCIENCES | 456 | 100.0 | .7 | 23.2 | 8.1 | 17.8 | 10.5 | 18.2 | 19.1 | 2.4 |
| | ENGINEERING | 144 | 100.1 | 3.5 | 24.3 | 11.1 | 18.8 | 9.7 | 17.4 | 11.1 | 4.2 |
| | ALL OTHER FIELDS | 513 | 100.1 | 1.6 | 35.3 | 8.8 | 12.9 | 11.7 | 14.2 | 12.5 | 3.1 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 4136 | 99.9 | 2.2 | 29.6 | 10.3 | 17.3 | 11.2 | 14.4 | 12.5 | 2.4 |
| | BIO-SCIENCES, TOTAL | 1498 | 100.0 | 2.8 | 29.3 | 11.1 | 18.4 | 9.7 | 13.4 | 12.5 | 2.8 |
| | BASIC MED. SCIENCES | 927 | 100.0 | 3.2 | 30.7 | 10.5 | 19.0 | 9.5 | 12.6 | 11.8 | 2.7 |
| | OTHER BIO-SCIENCES | 571 | 100.1 | 2.1 | 27.0 | 12.1 | 17.3 | 10.2 | 14.7 | 13.7 | 3.0 |
| | MEDICAL SCIENCES | 121 | 99.9 | 2.5 | 26.4 | 9.9 | 23.1 | 5.0 | 9.9 | 19.0 | 4.1 |
| | AGRIC. SCIENCES | 217 | 100.1 | | 35.5 | 12.0 | 18.9 | 13.4 | 10.6 | 7.4 | 2.3 |
| | PSYCHOLOGY | 153 | 100.0 | 3.9 | 28.1 | 7.2 | 20.9 | 9.2 | 15.0 | 15.0 | .7 |
| | SOCIAL SCIENCES | 682 | 99.9 | 2.2 | 31.8 | 9.4 | 13.8 | 12.3 | 15.2 | 13.9 | 1.3 |
| | MATHEMATICS | 196 | 100.1 | 3.6 | 26.5 | 8.7 | 13.3 | 12.8 | 16.8 | 14.8 | 3.6 |
| | PHYSICAL SCIENCES | 462 | 100.0 | 1.3 | 26.8 | 8.9 | 17.1 | 11.5 | 17.7 | 13.9 | 2.8 |
| | ENGINEERING | 181 | 100.0 | | 29.8 | 14.4 | 16.0 | 12.7 | 15.5 | 10.5 | 1.1 |
| | ALL OTHER FIELDS | 626 | 100.0 | 2.2 | 29.9 | 9.9 | 17.7 | 13.4 | 14.4 | 9.9 | 2.6 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

## TABLE 17

## EDUCATION OF MOTHER

| COHORT | FIELD | TOTAL NO. | TOTAL % | PERCENT TERMINATING AT EACH LEVEL: NONE | GR. 1-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | GRAD SCH. | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10017 | 100.1 | 2.3 | 27.3 | 10.1 | 26.4 | 17.3 | 10.4 | 2.6 | 3.7 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2965 | 100.0 | 2.5 | 29.0 | 8.9 | 25.8 | 17.6 | 9.4 | 1.5 | 5.3 |
| | BIO-SCIENCES, TOTAL | 922 | 99.9 | 2.8 | 32.9 | 7.5 | 25.9 | 17.0 | 8.2 | 1.2 | 4.4 |
| | BASIC MED. SCIENCES | 559 | 99.9 | 3.4 | 32.7 | 7.3 | 24.7 | 15.6 | 9.3 | 1.4 | 5.5 |
| | OTHER BIO-SCIENCES | 363 | 100.0 | 1.9 | 33.1 | 7.7 | 27.8 | 19.3 | 6.6 | .8 | 2.8 |
| | MEDICAL SCIENCES | 70 | 100.1 | 2.9 | 24.3 | 8.6 | 21.4 | 14.3 | 5.7 | 4.3 | 18.6 |
| | AGRIC. SCIENCES | 151 | 99.9 | 2.6 | 34.4 | 11.9 | 20.5 | 17.9 | 7.3 | 2.0 | 3.3 |
| | PSYCHOLOGY | 144 | 100.0 | 2.1 | 25.7 | 8.3 | 25.7 | 22.9 | 10.4 | 2.1 | 2.8 |
| | SOCIAL SCIENCES | 506 | 100.1 | 2.2 | 26.9 | 8.3 | 24.5 | 18.8 | 10.5 | 2.4 | 6.5 |
| | MATHEMATICS | 131 | 100.1 | 4.6 | 28.2 | 11.5 | 25.2 | 16.0 | 9.2 | 3.1 | 2.3 |
| | PHYSICAL SCIENCES | 444 | 99.9 | 1.8 | 19.1 | 10.6 | 32.2 | 17.8 | 13.7 | 1.8 | 2.9 |
| | ENGINEERING | 138 | 99.9 | 2.2 | 33.3 | 9.4 | 28.3 | 18.1 | 4.3 | .7 | 3.6 |
| | ALL OTHER FIELDS | 459 | 100.0 | 2.2 | 32.2 | 9.2 | 22.4 | 16.6 | 8.9 | | 8.5 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2916 | 100.1 | 2.2 | 28.4 | 9.6 | 25.9 | 16.8 | 11.1 | 2.5 | 3.6 |
| | BIO-SCIENCES, TOTAL | 746 | 100.0 | 2.8 | 31.0 | 10.3 | 24.8 | 16.4 | 8.8 | 1.7 | 4.2 |
| | BASIC MED. SCIENCES | 402 | 100.0 | 3.5 | 30.8 | 8.0 | 24.9 | 16.9 | 9.0 | 1.7 | 5.2 |
| | OTHER BIO-SCIENCES | 344 | 99.9 | 2.0 | 31.1 | 13.1 | 24.7 | 15.7 | 8.7 | 1.7 | 2.9 |
| | MEDICAL SCIENCES | 63 | 100.0 | 1.6 | 19.0 | 4.8 | 27.0 | 19.0 | 22.2 | 1.6 | 4.8 |
| | AGRIC. SCIENCES | 168 | 100.0 | .6 | 30.4 | 11.9 | 24.4 | 20.2 | 8.3 | 2.4 | 1.8 |
| | PSYCHOLOGY | 171 | 99.8 | 2.3 | 29.8 | 10.5 | 24.0 | 17.5 | 9.9 | 2.9 | 2.9 |
| | SOCIAL SCIENCES | 524 | 100.2 | 2.5 | 28.1 | 10.1 | 25.8 | 17.4 | 10.9 | 2.3 | 3.1 |
| | MATHEMATICS | 131 | 100.0 | 3.1 | 26.7 | 8.4 | 27.5 | 13.7 | 12.2 | 5.3 | 3.1 |
| | PHYSICAL SCIENCES | 456 | 100.0 | .9 | 21.3 | 7.0 | 30.5 | 17.5 | 15.8 | 3.5 | 3.5 |
| | ENGINEERING | 144 | 100.1 | 4.2 | 27.1 | 9.7 | 27.8 | 14.6 | 9.0 | 2.8 | 4.9 |
| | ALL OTHER FIELDS | 513 | 99.9 | 2.1 | 32.0 | 10.3 | 23.6 | 15.8 | 10.5 | 1.9 | 3.7 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 4136 | 100.2 | 2.3 | 25.3 | 11.3 | 27.2 | 17.3 | 10.6 | 3.5 | 2.7 |
| | BIO-SCIENCES, TOTAL | 1498 | 100.0 | 2.4 | 25.3 | 11.7 | 28.7 | 16.6 | 9.1 | 3.1 | 3.1 |
| | BASIC MED. SCIENCES | 927 | 100.0 | 2.7 | 25.7 | 11.3 | 30.3 | 16.0 | 8.1 | 3.0 | 2.9 |
| | OTHER BIO-SCIENCES | 571 | 100.1 | 1.9 | 24.7 | 12.3 | 26.1 | 17.7 | 10.7 | 3.2 | 3.5 |
| | MEDICAL SCIENCES | 121 | 100.0 | 3.3 | 30.6 | 11.6 | 19.0 | 19.0 | 9.9 | 2.5 | 4.1 |
| | AGRIC. SCIENCES | 217 | 99.9 | 1.8 | 30.9 | 12.9 | 23.0 | 21.2 | 5.5 | 1.8 | 2.8 |
| | PSYCHOLOGY | 153 | 100.1 | 2.6 | 23.5 | 9.2 | 35.3 | 14.4 | 9.2 | 3.9 | 2.0 |
| | SOCIAL SCIENCES | 682 | 99.9 | 2.6 | 27.3 | 9.8 | 24.0 | 17.0 | 12.8 | 4.5 | 1.9 |
| | MATHEMATICS | 196 | 100.0 | 3.6 | 21.4 | 7.1 | 28.6 | 15.3 | 14.3 | 6.1 | 3.6 |
| | PHYSICAL SCIENCES | 462 | 100.0 | 1.5 | 17.7 | 11.3 | 32.0 | 18.6 | 12.8 | 3.5 | 2.6 |
| | ENGINEERING | 181 | 100.1 | 2.2 | 28.2 | 14.4 | 26.0 | 15.5 | 9.9 | 2.8 | 1.1 |
| | ALL OTHER FIELDS | 626 | 99.9 | 1.6 | 26.5 | 12.3 | 24.1 | 18.5 | 11.3 | 3.2 | 2.4 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 8

Educational Level of Fathers of Doctorate-Holders

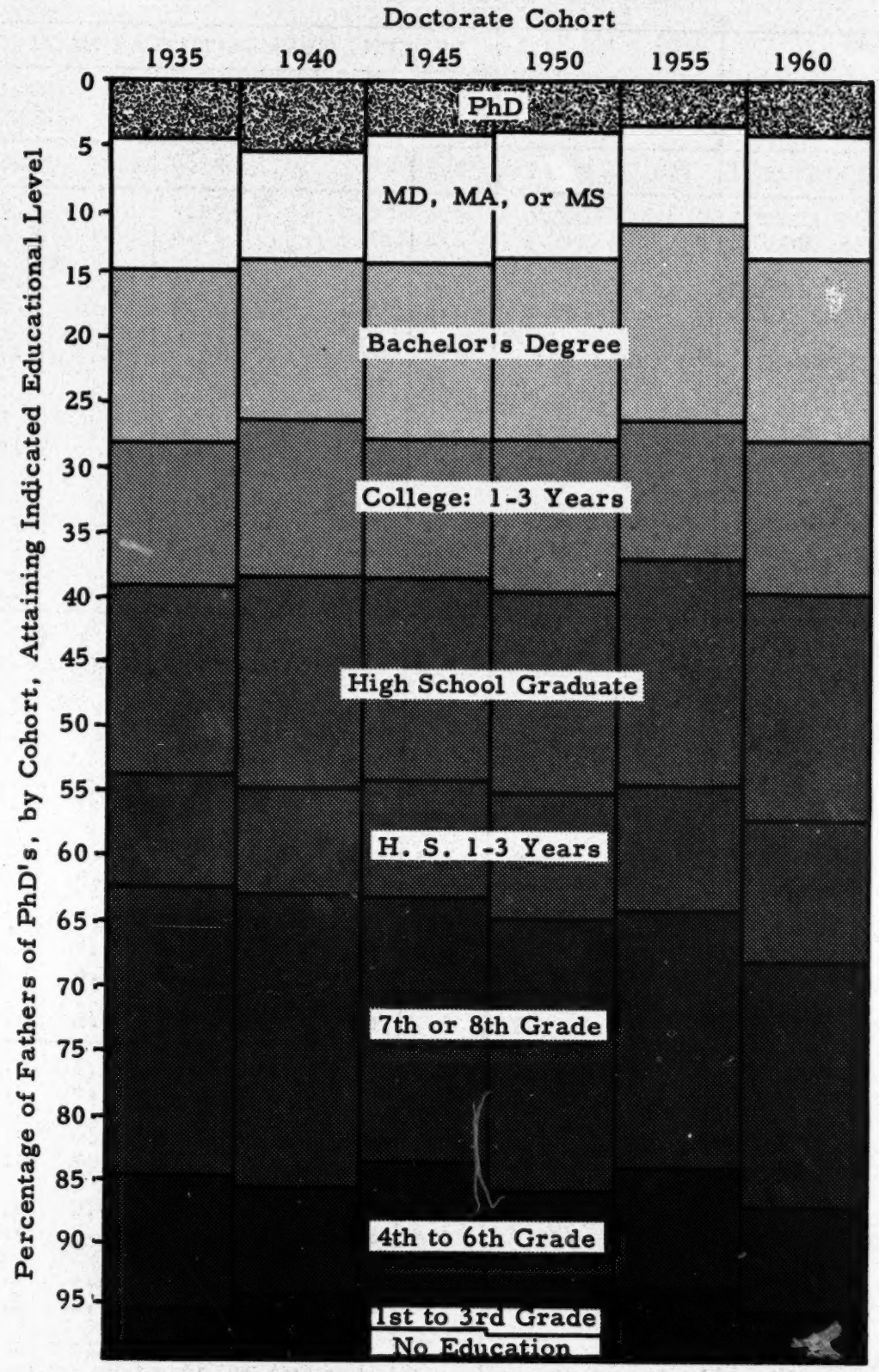
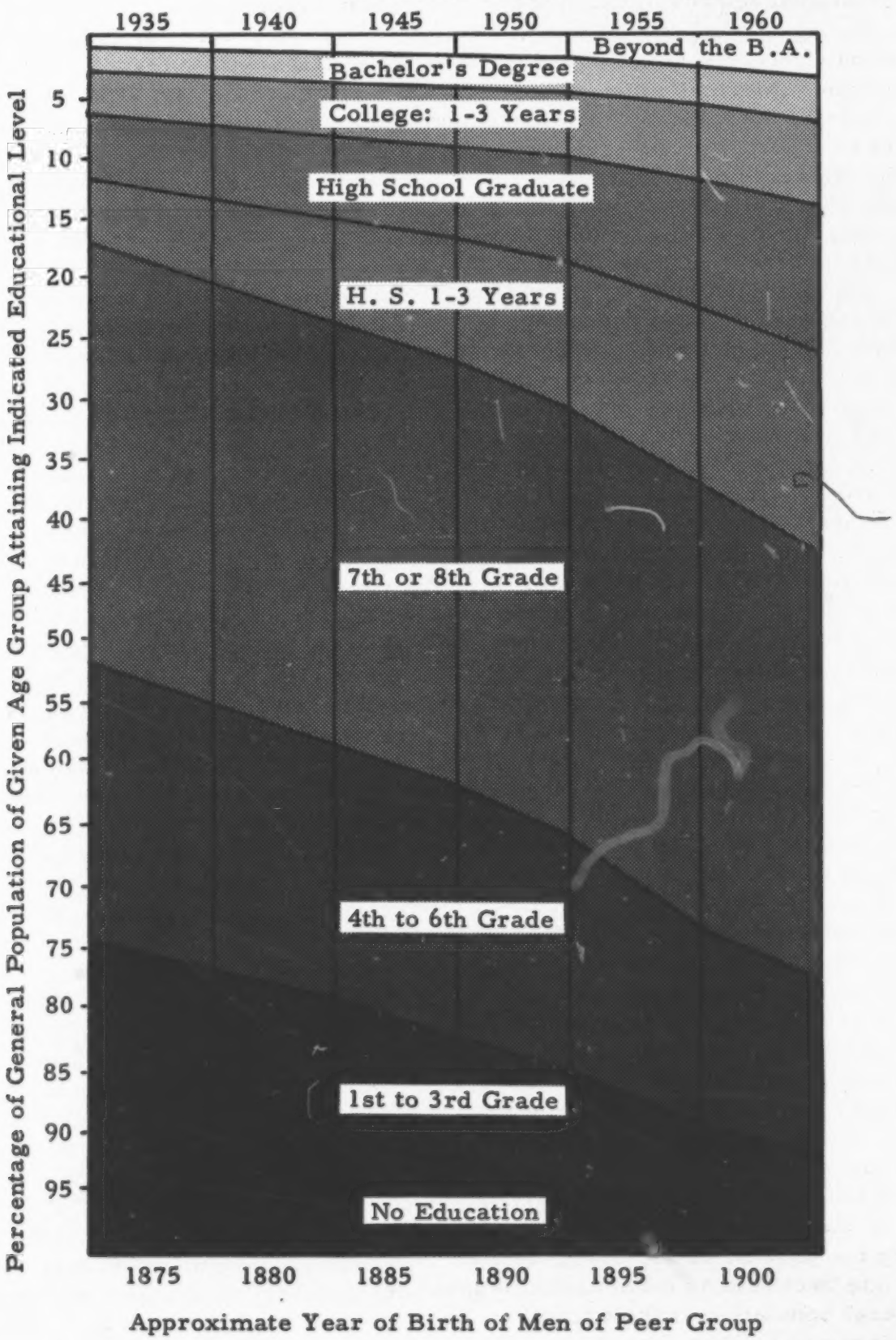


Figure 9

Educational Levels of Peers of Fathers of PhD's, by Doctorate Cohort



of the total population, must cease. More probably, this assumption will gradually become invalid; as the general educational level of the population increases, it is likely that the educational level of the parents of doctorate-holders will also increase, although perhaps the latter change may be less rapid. Meanwhile, the general educational improvement of the population in all occupational categories has had an interesting effect, as shown in Table 18.

Table 18 provides information on the occupational levels of the fathers of the doctorate-holders by decade cohorts and general fields. As with the educational levels, there are interesting field differences, mostly in the expected direction. For example, the proportion of those in the agricultural sciences whose fathers were either farmers or farm managers is exceptionally high. The seven occupational categories shown in Table 18 are a condensation from the more specific categories shown in Appendix 13, which also provides a more detailed field and cohort break-out. These categories are as follows: College or university teacher; other professional; managerial; farm or farm management; sales and service; clerical; skilled craftsman; semi-skilled; unskilled. The latter three have been combined in Table 18. Census data, fortunately, were available in categories that correspond rather well with those used here; they were used to derive age-specific data for a normative base from which the data of Figure 10 were computed. In Figure 10 the ordinate is an expectancy ratio: the ratio of the relative frequency of the occupational category among the fathers of doctorate-holders to its relative frequency among males in the general population of the same age as the fathers of the doctorate-holders. Thus, in the professional category, at the earliest point on the diagram, it is shown that the frequency of professional workers (combining college teachers and others) among the fathers of doctorate-holders was eight times as high as in the general population. By the end of the period here investigated, this proportion had dropped to 5:1. For the managerial group there was a slight decline, but the ratio is still 2:1. At the unskilled labor level, the disproportion was of course in the opposite direction. Unskilled laborers among the parents of doctorate-holders appeared only one twentieth as often as they appear among the general population at the beginning of the period; at the end of the period, the disproportion had been reduced to 1:6. At the semi-skilled labor level there was a minor upward trend. For all the other groups, the proportions were not significantly different from a 1:1 ratio, and showed mixed trends over the six data points of this chart. They have therefore been grouped into a general gray zone about the normality point; this zone covers the widest deviations from 1:1 shown for any of the groups included.

The trend lines in Figure 10 invite speculation as to the possible trends in the future. As these lines depict a ratio, it is necessary to examine separately the numerator and the denominator of this ratio. The denominator is the relative frequency of an occupational group among members of the general male population, for a specific age group. This figure can be determined with some accuracy for 25-30 years beyond the range shown on the chart, as the chart depicts data for men 60 years of age and older, whereas general occupational category is fixed for almost everyone by the age of 30. By examining the occupational distribution of age groups between 30 and 55 years of age in the 1960 census data, the denominators of the expectancy ratios can be computed. When this is done, it is found that for the professional group the trend is upward for at least 30 years, and presumably indefinitely after that. For the farm population, it is sharply downward for the indefinite future. For the remainder of the groups, trends are not as clear-cut, particularly as matters of definition enter for the younger groups. This is especially true of the managerial group, where no clear trend is evident. Clerical, sales, and service occupations also show no large and steady trends. The skilled and semi-skilled show an upward trend for the quarter of a century next following the youngest cohort shown in Figure 10; the unskilled group changes but little. Over the longer term, according to projections by the Department of Labor, the semi-skilled group and unskilled group should decline as a percentage of the total labor force.

The numerator of the expectancy ratio is a matter to be determined empirically with each new doctorate crop; speculation is warranted as to the trend of the numerators over the next decade or two, perhaps longer. It is reasonable to assume that there will be an increase in doctorates from families of the lesser-skilled groups as the general educational level of these occupational categories increases. Another factor working in the same direction is increased educational support for those of limited financial means but high ability. A federal program of scholarship support, if it should be undertaken,

## TABLE 18

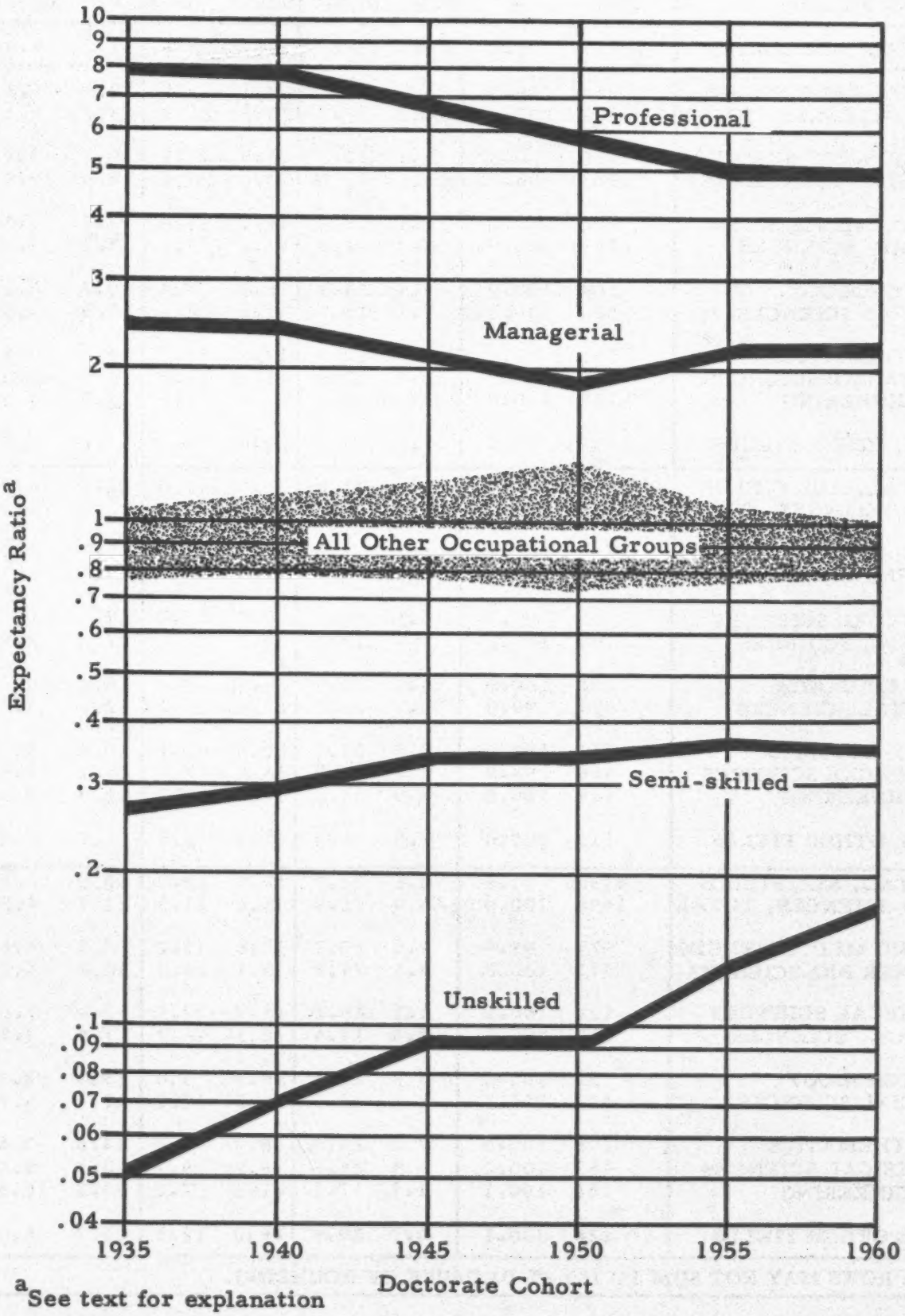
## OCCUPATIONAL LEVEL OF FATHER -- PERCENTAGE IN EACH CATEGORY

| COHORT | FIELD | TOTAL NO. | TOTAL % | COLL TCHR | OTHER PROF | MNGR | FARM | SLS. SVC. | CLER | LABOR | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10017 | 99.9 | 5.5 | 22.5 | 18.1 | 15.6 | 11.2 | 4.4 | 21.4 | 1.2 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 2965 | 99.9 | 6.5 | 22.6 | 18.7 | 19.5 | 9.0 | 4.1 | 18.0 | 1.5 |
| | BIO-SCIENCES, TOTAL | 922 | 100.1 | 6.1 | 19.7 | 16.3 | 21.3 | 9.9 | 4.1 | 21.3 | 1.4 |
| | BASIC MED. SCIENCES | 559 | 100.0 | 6.1 | 20.2 | 16.5 | 17.9 | 10.7 | 3.9 | 23.3 | 1.4 |
| | OTHER BIO-SCIENCES | 363 | 100.0 | 6.1 | 19.0 | 16.0 | 26.4 | 8.5 | 4.4 | 18.2 | 1.4 |
| | MEDICAL SCIENCES | 70 | 100.0 | 5.7 | 28.6 | 17.1 | 11.4 | 12.9 | 4.3 | 18.6 | 1.4 |
| | AGRIC. SCIENCES | 151 | 99.9 | 3.3 | 11.9 | 13.2 | 49.7 | 5.3 | 1.3 | 12.6 | 2.6 |
| | PSYCHOLOGY | 144 | 100.0 | 9.7 | 36.1 | 18.1 | 7.6 | 9.7 | 2.1 | 15.3 | 1.4 |
| | SOCIAL SCIENCES | 506 | 100.0 | 7.1 | 25.3 | 21.5 | 22.1 | 7.5 | 3.0 | 11.7 | 1.8 |
| | MATHEMATICS | 131 | 99.9 | 6.9 | 18.3 | 19.8 | 13.7 | 14.5 | 3.8 | 22.1 | .8 |
| | PHYSICAL SCIENCES | 444 | 99.8 | 9.7 | 23.6 | 19.1 | 15.5 | 9.9 | 5.6 | 16.2 | .2 |
| | ENGINEERING | 138 | 100.0 | 2.2 | 17.4 | 24.6 | 11.6 | 8.0 | 6.5 | 29.0 | .7 |
| | ALL OTHER FIELDS | 459 | 99.9 | 5.2 | 25.7 | 20.0 | 15.9 | 7.2 | 5.0 | 18.1 | 2.8 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 2916 | 99.9 | 5.7 | 22.8 | 17.0 | 15.9 | 12.3 | 4.3 | 21.1 | .8 |
| | BIO-SCIENCES, TOTAL | 746 | 99.9 | 6.0 | 18.2 | 14.2 | 19.4 | 12.9 | 4.2 | 24.1 | .9 |
| | BASIC MED. SCIENCES | 402 | 100.1 | 5.2 | 17.2 | 15.7 | 15.2 | 15.7 | 4.0 | 25.6 | 1.5 |
| | OTHER BIO-SCIENCES | 344 | 100.1 | 7.0 | 19.5 | 12.5 | 24.4 | 9.6 | 4.4 | 22.4 | .3 |
| | MEDICAL SCIENCES | 63 | 99.9 | 6.3 | 39.7 | 7.9 | 12.7 | 19.0 | | 14.3 | |
| | AGRIC. SCIENCES | 168 | 100.0 | 4.8 | 10.1 | 7.1 | 53.6 | 7.1 | 2.4 | 14.9 | |
| | PSYCHOLOGY | 171 | 100.0 | 4.1 | 19.9 | 18.7 | 8.8 | 14.0 | 4.7 | 29.2 | .6 |
| | SOCIAL SCIENCES | 524 | 99.9 | 5.9 | 24.2 | 22.1 | 14.7 | 12.2 | 3.2 | 17.2 | .4 |
| | MATHEMATICS | 131 | 100.0 | 5.3 | 29.8 | 20.6 | 8.4 | 14.5 | 4.6 | 15.3 | 1.5 |
| | PHYSICAL SCIENCES | 456 | 99.9 | 8.3 | 26.5 | 16.4 | 7.7 | 12.1 | 5.9 | 21.5 | 1.5 |
| | ENGINEERING | 144 | 100.0 | 4.9 | 22.2 | 17.4 | 8.3 | 11.8 | 8.3 | 25.7 | 1.4 |
| | ALL OTHER FIELDS | 513 | 100.0 | 3.5 | 26.3 | 19.1 | 13.8 | 11.7 | 4.1 | 20.9 | .6 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 4136 | 99.9 | 4.6 | 22.2 | 18.5 | 12.7 | 12.0 | 4.6 | 24.1 | 1.2 |
| | BIO-SCIENCES, TOTAL | 1498 | 100.0 | 4.9 | 21.9 | 16.6 | 11.9 | 12.7 | 4.5 | 25.8 | 1.7 |
| | BASIC MED. SCIENCES | 927 | 99.9 | 4.5 | 20.3 | 17.6 | 11.2 | 13.9 | 4.6 | 25.9 | 1.9 |
| | OTHER BIO-SCIENCES | 571 | 100.0 | 5.6 | 24.5 | 15.1 | 13.0 | 10.7 | 4.2 | 25.7 | 1.2 |
| | MEDICAL SCIENCES | 121 | 100.1 | 1.7 | 28.1 | 15.7 | 12.4 | 12.4 | 3.3 | 24.8 | 1.7 |
| | AGRIC. SCIENCES | 217 | 100.1 | 2.3 | 13.4 | 10.1 | 44.7 | 7.4 | 3.7 | 18.0 | .5 |
| | PSYCHOLOGY | 153 | 100.0 | 5.2 | 23.5 | 24.2 | 4.6 | 15.0 | 2.6 | 24.2 | .7 |
| | SOCIAL SCIENCES | 682 | 100.1 | 6.5 | 22.9 | 19.5 | 12.2 | 11.9 | 4.7 | 21.8 | .6 |
| | MATHEMATICS | 196 | 100.0 | 7.1 | 26.0 | 18.9 | 6.6 | 13.3 | 3.6 | 23.5 | 1.0 |
| | PHYSICAL SCIENCES | 462 | 100.0 | 3.5 | 26.8 | 18.2 | 8.7 | 10.8 | 5.4 | 26.0 | .6 |
| | ENGINEERING | 181 | 100.1 | 1.7 | 17.1 | 22.1 | 7.2 | 13.3 | 10.5 | 26.5 | 1.7 |
| | ALL OTHER FIELDS | 626 | 100.1 | 4.2 | 20.9 | 23.0 | 12.5 | 11.7 | 4.0 | 22.5 | 1.3 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 10

CHANGING OCCUPATIONAL SOURCES OF DOCTORATE-HOLDERS




[a]See text for explanation

would tend definitely to raise the educational aspirations and achievement of those from lower-income families. The trend to more general education is steadily upward; already over half of the pertinent age group graduates from high school, as compared with only one quarter for the 1900 birth cohort. Of those graduating from high school at the present time, approximately half go on to college: it is becoming "the thing to do" for an ever larger portion of the population, whereas it was a rarity for those born at the turn of the century. As awareness of higher education (and means to attain it) becomes more general, so likewise, one may expect, will aspiration to graduate school and eventual doctorate attainment. It is a safe guess that at the present time a great proportion of the population, even of those potentially capable of doctorate attainment, have but little awareness of the possibility of education beyond the baccalaureate, except in a dim way with respect to such ancient professions as law and medicine. Studies of the ability level of doctorate-holders, measured at the time of high school attendance, indicate that only a small fraction of those with doctorate capability (even assuming a very rigorous definition of the term) actually attain the PhD. All of these factors taken together would tend to point to the probability that over the next decade or more, a higher and higher proportion of doctorate-holders will come from families where the bread-winner is of the lower-paid and less-skilled occupational categories. If this is true, the opposite would be expected from the professional groups. The net result would be that the trend lines shown in Figure 10 would continue to converge over the foreseeable future.

TABLE 19

Relation of Education of Father to Category of Present Employer, All Fields Combined

| Educ. Level of Father | Numbers and Per cent Distribution | | | | | Computation of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll,. Univ. | U.S. Govt. | Bus., Ind. | All Other |
| Total | 9664 | 5747 | 801 | 1468 | 1648 | Expected | 9664.0 | 5747.0 | 801.0 | 1468.0 | 1648.0 |
| | 100.0 | 59.5 | 8.3 | 15.2 | 17.1 | Chi Sq. | 46.3 | 7.8 | 12.1 | 10.6 | 15.9 |
| None | 214 | 102 | 27 | 32 | 53 | Expected | 214.0 | 127.3 | 17.7 | 32.5 | 36.5 |
| | 100.0 | 47.7 | 12.6 | 15.0 | 24.8 | Chi Sq. | 17.3 | 5.0 | 4.8 | 0.0 | 7.5 |
| Grades | 213 | 130 | 20 | 28 | 35 | Expected | 213.0 | 126.7 | 17.7 | 32.4 | 36.3 |
| 1-3 | 100.0 | 61.0 | 9.4 | 13.1 | 16.4 | Chi Sq. | 1.0 | 0.1 | 0.3 | 0.6 | 0.0 |
| Grades | 878 | 524 | 82 | 113 | 159 | Expected | 878.0 | 522.1 | 72.8 | 133.4 | 149.7 |
| 4-6 | 100.0 | 59.7 | 9.3 | 12.9 | 18.1 | Chi Sq. | 4.9 | 0.0 | 1.2 | 3.1 | 0.6 |
| Grades | 2023 | 1213 | 184 | 298 | 328 | Expected | 2023.0 | 1203.0 | 167.7 | 307.3 | 345.0 |
| 7-8 | 100.0 | 60.0 | 9.1 | 14.7 | 16.2 | Chi Sq. | 2.8 | 0.1 | 1.6 | 0.3 | 0.8 |
| H.S. | 932 | 559 | 73 | 140 | 160 | Expected | 932.0 | 554.2 | 77.2 | 141.6 | 158.9 |
| 1-3 | 100.0 | 60.0 | 7.8 | 15.0 | 17.2 | Chi Sq. | 0.3 | 0.0 | 0.2 | 0.0 | 0.0 |
| H.S. | 1610 | 922 | 130 | 276 | 282 | Expected | 1610.0 | 957.4 | 133.4 | 244.6 | 274.6 |
| Grad. | 100.0 | 57.3 | 8.1 | 17.1 | 17.5 | Chi Sq. | 5.6 | 1.3 | 0.1 | 4.0 | 0.2 |
| Coll. | 1106 | 684 | 82 | 185 | 155 | Expected | 1106.0 | 657.7 | 91.7 | 168.0 | 188.6 |
| 1-3 | 100.0 | 61.8 | 7.4 | 16.7 | 14.0 | Chi Sq. | 9.8 | 1.1 | 1.0 | 1.7 | 6.0 |
| Coll. | 1359 | 819 | 95 | 207 | 238 | Expected | 1359.0 | 808.2 | 112.6 | 206.4 | 231.8 |
| Grad. | 100.0 | 60.3 | 7.0 | 15.2 | 17.5 | Chi Sq. | 3.1 | 0.1 | 2.8 | 0.0 | 0.2 |
| Beyond | 1329 | 794 | 108 | 189 | 238 | Expected | 1329.0 | 790.3 | 110.2 | 201.9 | 226.6 |
| B.A. | 100.0 | 59.7 | 8.1 | 14.2 | 17.9 | Chi Sq. | 1.5 | 0.0 | 0.0 | 0.8 | 0.6 |

TABLE 20

Relation of Education of Mother to Category of Present Employer, All Fields Combined

| Educ. Level of Mother | Numbers and Per cent Distribution | | | | | Compution of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other |
| Total | 9633 | 5737 | 798 | 1468 | 1630 | Expected | 9633.0 | 5737.0 | 798.0 | 1468.0 | 1630.0 |
| | 100.0 | 59.6 | 8.3 | 15.2 | 16.9 | Chi Sq. | 68.2 | 10.3 | 12.7 | 20.9 | 24.3 |
| None | 231 | 112 | 25 | 33 | 61 | Expected | 231.0 | 137.6 | 19.1 | 35.2 | 39.1 |
| | 100.0 | 48.5 | 10.8 | 14.3 | 26.4 | Chi Sq. | 19.0 | 4.8 | 1.8 | 0.1 | 12.3 |
| Grades | 119 | 71 | 12 | 16 | 20 | Expected | 119.0 | 70.9 | 9.9 | 18.1 | 20.1 |
| 1-3 | 100.0 | 59.7 | 10.1 | 13.4 | 16.8 | Chi Sq. | 0.7 | 0.0 | 0.5 | 0.3 | 0.0 |
| Grades | 656 | 401 | 52 | 79 | 124 | Expected | 656.0 | 390.7 | 54.3 | 100.0 | 111.0 |
| 4-6 | 100.0 | 61.1 | 7.9 | 12.0 | 18.9 | Chi Sq. | 6.3 | 0.3 | 0.1 | 4.4 | 1.5 |
| Grades | 1956 | 1136 | 193 | 269 | 358 | Expected | 1956.0 | 1164.9 | 162.0 | 298.1 | 331.0 |
| 7-8 | 100.0 | 58.1 | 9.9 | 13.8 | 18.3 | Chi Sq. | 11.7 | 0.7 | 5.9 | 2.8 | 2.2 |
| H.S. | 1011 | 626 | 70 | 147 | 168 | Expected | 1011.0 | 602.1 | 83.8 | 154.1 | 171.1 |
| 1-3 | 100.0 | 61.9 | 6.9 | 14.5 | 16.6 | Chi Sq. | 3.6 | 0.9 | 2.3 | 0.3 | 0.1 |
| H.S. | 2636 | 1549 | 200 | 459 | 428 | Expected | 2636.0 | 1569.9 | 218.4 | 401.7 | 446.0 |
| Grad. | 100.0 | 58.8 | 7.6 | 17.4 | 16.2 | Chi Sq. | 10.7 | 0.3 | 1.5 | 8.2 | 0.7 |
| Coll. | 1727 | 1031 | 144 | 260 | 292 | Expected | 1727.0 | 1028.5 | 143.1 | 263.2 | 292.2 |
| 1-3 | 100.0 | 59.7 | 8.3 | 15.1 | 16.9 | Chi Sq. | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Coll. | 1038 | 636 | 84 | 176 | 142 | Expected | 1038.0 | 618.2 | 86.0 | 158.2 | 175.6 |
| Grad. | 100.0 | 61.3 | 8.1 | 17.0 | 13.7 | Chi Sq. | 9.0 | 0.5 | 0.0 | 2.0 | 6.4 |
| Beyond | 259 | 175 | 18 | 29 | 37 | Expected | 259.0 | 154.2 | 21.5 | 39.5 | 43.8 |
| B.A. | 100.0 | 67.6 | 6.9 | 11.2 | 14.3 | Chi Sq. | 7.2 | 2.8 | 0.6 | 2.8 | 1.1 |

From time to time questions are raised regarding the occupational destinations of those from different socio-economic backgrounds. Do the college professors tend to come disproportionately from collegiate backgrounds, for example? Are those whose parents were educationally disadvantaged themselves unlikely to find their way into particular occupational categories, once they have attained the doctorate? These questions were carefully investigated.

Table 19 depicts the relationship between the education of the father of the doctorate-holder and category of employer on present job, for all fields and cohorts combined. For the purpose of the present exploration, the employer categories were reduced to four: colleges and universities; United States government; business and industry; and all other employers combined. In Table 19, the left half of the table is devoted to the numbers of cases in each employer category at each educational level, and to the percentage distribution, by level, of employer categories. The statistical exploration of the possibility that these distributions were non-random is indicated on the right-hand side of the table. Here, the cases are distributed, in the lines marked "expected" as they would be if there were no relationship between educational level and category of employer. That is, the percentage distribution is the same for each line of the table. In the lines marked "Chi squared" is the statistical computation of a discrepancy value, termed $X^2$, between the expected and the obtained values. The key value to be examined is the grand sum of all these contributions to $X^2$, at the top of the total column at the right side of the table. Here we find the $X^2$ to be 46.3. Reference to a table of the probability of $X^2$ shows this to be significant between the .01 and the .001 level of confidence. There is, then, some overall relationship between category of employer and educational level of father that deserves further examination. The first step is to translate this $X^2$ value to a contingency coefficient, as a means of measuring the intensity of the relationship. When this is done, it is found that the coefficient is only .07--a very weak overall relationship, but statistically significant because of the very large number of cases involved.

Exploring the table further, it is found that the contribution to $X^2$ by column of employer

TABLE 21

Relation of Occupation of Father to Category of Present Employer, All Fields Combined

| Occup. Level of Father | Numbers and Per cent Distribution | | | | | Compution of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other |
| Total | 9881 | 5842 | 817 | 1491 | 1731 | Expected | 9881.0 | 5842.0 | 817.0 | 1491.0 | 1731.0 |
| | 100.0 | 59.1 | 8.3 | 15.1 | 17.5 | Chi Sq. | 75.9 | 4.7 | 24.3 | 34.5 | 12.4 |
| Coll. or Univ. | 551 | 319 | 52 | 73 | 107 | Expected | 551.0 | 325.8 | 45.6 | 83.1 | 96.5 |
| | 100.0 | 57.9 | 9.4 | 13.2 | 19.4 | Chi Sq. | 3.4 | 0.1 | 0.9 | 1.2 | 1.1 |
| Other Prof. | 2254 | 1370 | 146 | 305 | 433 | Expected | 2254.0 | 1332.6 | 186.4 | 340.1 | 394.9 |
| | 100.0 | 60.8 | 6.5 | 13.5 | 19.2 | Chi Sq. | 17.1 | 1.0 | 8.7 | 3.6 | 3.7 |
| Mana-gerial | 1809 | 1046 | 126 | 306 | 331 | Expected | 1809.0 | 1069.5 | 149.6 | 273.0 | 316.9 |
| | 100.0 | 57.8 | 7.0 | 16.9 | 18.3 | Chi Sq. | 8.9 | 0.5 | 3.7 | 4.0 | 0.6 |
| Farmer | 1563 | 965 | 161 | 176 | 261 | Expected | 1563.0 | 924.1 | 129.2 | 235.8 | 273.8 |
| | 100.0 | 61.7 | 10.3 | 11.3 | 16.7 | Chi Sq. | 25.4 | 1.8 | 7.8 | 15.2 | 0.6 |
| Sales, Service | 1122 | 656 | 108 | 187 | 171 | Expected | 1122.0 | 663.4 | 92.8 | 169.3 | 196.6 |
| | 100.0 | 58.5 | 9.6 | 16.7 | 15.2 | Chi Sq. | 7.8 | 0.1 | 2.5 | 1.8 | 3.3 |
| Clerical | 440 | 255 | 37 | 71 | 77 | Expected | 440.0 | 260.1 | 36.4 | 66.4 | 77.1 |
| | 100.0 | 58.0 | 8.4 | 16.1 | 17.5 | Chi Sq. | 0.4 | 0.1 | 0.0 | 0.3 | 0.0 |
| Skilled Craft | 1377 | 788 | 119 | 233 | 237 | Expected | 1377.0 | 814.1 | 113.9 | 207.8 | 241.2 |
| | 100.0 | 57.2 | 8.6 | 16.9 | 17.2 | Chi Sq. | 4.2 | 0.8 | 0.2 | 3.1 | 0.1 |
| Unsk. and Semi-sk. | 765 | 443 | 68 | 140 | 114 | Expected | 765.0 | 452.3 | 63.3 | 115.4 | 134.0 |
| | 100.0 | 57.9 | 8.9 | 18.3 | 14.9 | Chi Sq. | 8.8 | 0.2 | 0.4 | 5.2 | 3.0 |

category is rather negatively related to the number of cases in the column--an indication that chance relationships may be inflating the value somewhat. The summed $X^2$ for the college and university column is only 7.8, which, considered by itself, does not indicate a significant relationship. A very slight positive relationship between educational level of father and probability of university employment is evident; whether it is greater than chance is the question. A similar question arises regarding employment by the U.S. government, where a slight but consistent negative relationship is seen. In the business and industry column, the numbers at the highest and lowest educational levels are approximately as expected, but in the middle range the tendency is for too many at the high school level and too few at the level of the upper grades. Finally, in the "all other employers" category, there is a surplus at the "no formal education" level and a smaller number than expected at the "some college" level. Because of the heterogeneity of this category, interpretation is difficult. To sum up the impressions from examination of this table, some slight tendencies are found in not unexpected directions, but they are properly evaluated by the contingency coefficient of .07.

Turning to Table 20, which depicts the relationship between educational level of the mother of the doctorate-holder and category of present employer, it is to be seen that the same general trend holds. The $X^2$ of 68.2 for the whole table corresponds to a contingency coefficient of .08--not appreciably different from that regarding the father's education. Finally, Table 21 shows the relationship between employer and occupational level of the father of the doctorate-holder. Here the contingency coefficient is .09, barely stronger than that for education. The interpretation varies, however, as the occupational categories cannot properly be thought of in quite the same way as the linear educational-level scale. It appears that those whose fathers were in professional work tend to some extent to avoid government and business employment, and to be somewhat more frequent in the university and "all other" categories. Of those with farm backgrounds, an unduly large proportion are in government employment, and

fewer than expected in business and industry. Those whose fathers were in the "sales and service" category are found somewhat more frequently than chance would warrant in government and business employment, less frequently in the "all other" category. Finally, those whose fathers were from the labor categories, including skilled, semi-skilled, and unskilled, tend to be found somewhat more frequently in business and industry, and less frequently than expected in the university and "other" categories. All of these tendencies, however, are very mild, showing up only when large numbers of cases are aggregated.

TABLE 22

Relation of Family Background Factors to Present Employer Category

| Field of Doctorate | Education of Father | | | Education of Mother | | | Occupation of Father | | |
|---|---|---|---|---|---|---|---|---|---|
| | $X^2$ | P | C | $X^2$ | P | C | $X^2$ | P | C |
| All Fields Combined | 46.3 | .01-.001 | .07 | 68.2 | <.001 | .08 | 75.9 | <.001 | .09 |
| Basic Med. Sciences | 49.2 | .01-.001 | .16 | 41.9 | .02-.01 | .15 | 30.5 | .10-.05 | .13 |
| Other Bio-Sciences | 49.7 | .01-.001 | .16 | 38.6 | .05-.02 | .40 | 37.0 | .02-.01 | .13 |
| Psychology | 22.8 | >.50 | -- | 23.4 | .50 | -- | 15.1 | .80 | -- |
| Social Sciences | 32.1 | >.10 | -- | 30.5 | .20-.10 | -- | 35.7 | .05-.02 | -- |
| Mathematics | 37.3 | .05-.02 | -- | 41.7 | .02-.01 | -- | 33.6 | .05-.02 | -- |
| Physical Sciences | 12.9 | >.95 | -- | 28.0 | .30-.20 | -- | 20.9 | .50 | -- |
| Engineering | 42.0 | .01 | -- | 27.2 | .30 | -- | 16.5 | .70 | -- |
| All Other Fields | 28.5 | .30-.20 | -- | 45.4 | .01-.001 | .17 | 31.5 | .10-.05 | -- |
| Degrees of Freedom | 24 | | | 24 | | | 21 | | |
| Within-Fields Sum | 274.5 | .00006 | .17 | 276.7 | .00004 | .17 | 220.8 | .03 | .15 |
| Degrees of Freedom | 192 | | | 192 | | | 184 | | |

On the basis of these findings, it might at first seem unwarranted to explore further the relationships between background factors and employment category by field of doctorate. Yet this is not quite the case. All of the necessary tabulations were run, but those presented here only summarize the results. Table 22 presents the values of $X^2$, the probability level (P) of this statistic, and, where warranted, the conversion of $X^2$ to a contingency coefficient (C), by field of doctorate. The first line in Table 22 recapitulates the results discussed immediately above. The next eight lines present the $X^2$ and probability values for eight fields of doctorate. The final line summarizes the values for the eight separate fields. Here the value of $X^2$ is, of course, much larger, but this must be taken in relation to the much greater number of degrees of freedom. Even so, it is seen that the relationship is closer when the fields are taken into account than when field differences are ignored.

When the relationship of parents' education and father's occupation is examined in detail, field by field, it is found that many of the obtained $X^2$ values cannot be relied upon, as they are based on expected frequencies that are too small for reliability. In general, it is dubious practice to utilize data in which the expected cell frequencies fall below 10, and even more so when they are below 5. It is found that a number of the $X^2$ values in Table 22 are based in large part on contributions to $X^2$ derived from such unreliably small frequencies. This is true with respect to the mathematics and engineering $X^2$ values; these are thus ignored as nonsignificant. Other fields, such as psychology and the physical sciences are of course prima facie not significant. In the social sciences, only occupation of father appears to have a relationship that is close enough to create confidence as to its reliability. It still is not interpreted in terms of the contingency coefficient because of uncertainties as to its meaning; if C had been computed, it would have indicated a weak as well as unreliable relationship. In the "all other"category, educational level of the mother seems to be significant beyond the 1 per cent level of confidence, but its interpretation is difficult because of the heterogeneity of this field. This leaves the biological fields as those in which there appears to be a significant relationship between

background factors and employer category. Even here, where the relationships are statistically significant, they are weak, as shown by the contingency coefficients ranging from .13 to .16. The basic statistical tables are found in Appendix 14. Suffice it here to note that there are no surprising relationships. Those whose fathers were professional workers tend to occur with above-average frequency in universities and "all other" employment categories, and less frequently than expected in government and business employment. The government service has above-expectancy values for those whose fathers were farmers, farm managers, or in sales and service occupations; the "all other" employer category is weak in those from this family background. Those whose fathers were in the labor categories occur more frequently in business employment, less frquently in the "all other employers" category.

Chapter 5

# JOB MOBILITY AND FIELD CHANGES

Geographic migration was described in Chapter 1. Migration can occur in other dimensions, also. For example, one can move from one discipline to another or from one category of employer to another, or simply to a different job in the same field and for the same type of employer. The amount of job-changing is a function of many factors, including the level of demand in a given field, and hence the number of opportunities, the amount of satisfaction one experiences on the job, the traditions and customs of a given field or category of employment, as well as many personal factors. In this chapter, the gross amount of job-changing will be examined first, then the relation of job-changing to graduation cohort and time period, and finally the amount of changing from one discipline to another.

Job stability is a good base point from which to consider the various kinds of mobility. Table 23, below, gives the percentage of the total group and of each successive five-year cohort that did not change jobs within each five-year period following graduation. It may be observed that there are rather striking variations from one cohort to the next, but one general trend does hold: As expected, greater job stability is found as careers mature. Within each cohort, fewer moves are made in each successive five-year period than in the period preceding.

TABLE 23

Job Stability: Percentage of Doctorate-Holders with No Job Changes during Successive Five-Year Work Periods

| Work Period | All Cohorts Combined | 1935 Cohort | 1940 Cohort | 1945 Cohort | 1950 Cohort | 1955 Cohort |
|---|---|---|---|---|---|---|
| 1936-1940 | 53.4 | 53.4 | | | | |
| 1941-1945 | 47.9 | 55.7 | 41.0 | | | |
| 1946-1950 | 52.5 | 61.1 | 51.2 | 45.1 | | |
| 1951-1955 | 70.0 | 80.6 | 75.2 | 71.8 | 54.8 | |
| 1956-1960 | 70.0 | 83.4 | 78.4 | 78.0 | 66.1 | 52.2 |

Table 23 provides data only on those who do not change. When we consider the number who change once, twice, or more often within a five-year period, a more detailed and useful picture and a more analytical view are provided. Table 24 gives this information--the numbers of people with 1, 2, 3, 4, and 5 or more job changes in each five-year period, and the percentage each of these job-change groups is of the total number of people in a given cohort for that period. In Table 24, those who did not provide information on number of job changes are omitted; the percentages given are only for those who, in each period, did supply the necessary data.

TABLE 24

Number and Percentage of Doctorate-Holders with Varying Numbers of Job Changes in Each Five-Year Period Following Graduation

| Graduation Cohort | Total Group[a] | Number of Job Changes 0 | 1 | 2 | 3 | 4 | 5-9 |
|---|---|---|---|---|---|---|---|
| | | First Five-Year Period | | | | | |
| 1935 | 1315 | 702 | 454 | 112 | 37 | 6 | 4 |
| | 100.0 | 53.4 | 34.5 | 8.5 | 2.8 | .5 | .4 |
| 1940 | 1555 | 638 | 594 | 223 | 76 | 18 | 6 |
| | 100.0 | 41.0 | 38.2 | 14.3 | 4.9 | 1.2 | .4 |
| 1945 | 1259 | 568 | 489 | 149 | 46 | 5 | 2 |
| | 100.0 | 45.1 | 38.8 | 11.8 | 3.7 | .4 | .2 |
| 1950 | 1603 | 878 | 535 | 150 | 34 | 4 | 2 |
| | 100.0 | 54.8 | 33.4 | 9.4 | 2.1 | .3 | .1 |
| 1955 | 1887 | 985 | 625 | 200 | 66 | 9 | 2 |
| | 100.0 | 52.2 | 33.1 | 10.6 | 3.5 | .5 | .1 |
| | | Second Five-Year Period | | | | | |
| 1935 | 1321 | 736 | 423 | 121 | 35 | 4 | 2 |
| | 100.0 | 55.7 | 32.0 | 9.2 | 2.7 | .3 | .2 |
| 1940 | 1564 | 801 | 573 | 151 | 34 | 4 | 1 |
| | 100.0 | 51.2 | 36.6 | 9.7 | 2.2 | .3 | .1 |
| 1945 | 1251 | 898 | 276 | 64 | 9 | 3 | 1 |
| | 100.0 | 71.8 | 22.1 | 5.1 | .7 | .2 | .1 |
| 1950 | 1610 | 1064 | 437 | 90 | 18 | 1 | |
| | 100.0 | 66.1 | 27.1 | 5.6 | 1.1 | .1 | |
| | | Third Five-Year Period | | | | | |
| 1935 | 1313 | 802 | 399 | 95 | 13 | 3 | 1 |
| | 100.0 | 61.1 | 30.4 | 7.2 | 1.0 | .2 | .1 |
| 1940 | 1560 | 1173 | 310 | 65 | 10 | 2 | |
| | 100.0 | 75.2 | 19.9 | 4.2 | .6 | .1 | |
| 1945 | 1242 | 969 | 227 | 35 | 7 | 3 | 1 |
| | 100.0 | 78.0 | 18.3 | 2.8 | .6 | .2 | .1 |
| | | Fourth Five-Year Period | | | | | |
| 1935 | 1311 | 1057 | 208 | 41 | 3 | 2 | |
| | 100.0 | 80.6 | 15.9 | 3.1 | .2 | .2 | |
| 1940 | 1563 | 1225 | 276 | 52 | 9 | 1 | |
| | 100.0 | 78.4 | 17.7 | 3.3 | .6 | .1 | |
| | | Fifth Five-Year Period | | | | | |
| 1935 | 1309 | 1091 | 185 | 26 | 6 | 1 | |
| | 100.0 | 83.4 | 14.1 | 2.0 | .5 | .1 | |

[a]Cases for which no data were available in a particular time period were ommitted in that period; this accounts for varying N's for a given cohort.

Individual rows may not sum to 100.0% because of rounding.

The first data column of Table 24 is, of course, identical with the information of Table 23, but arranged in a different fashion. The two tables together make possible the comparison of cohorts and work periods. As might be anticipated, the members of the 1940 cohort, who were maximally affected by World War II in the crucial early years of their careers, were the most mobile in the first five-year period, and even into the second five-year period following graduation. By the end of the first post-doctoral decade, however, the career perturbations induced by the war seem to have died out for this group. The job stability of the 1935 cohort appears also to have been affected by World War II, as the second five-year postdoctoral period for this group was scarcely more stable than the first. For this oldest cohort, too, the third period (the post-war years) shows far more changes than are found in the later cohorts at the corresponding stage in their careers. The final postwar effects appear to be manifested in the immediate post-doctoral experience of the 1945 graduation cohort; but in the second five-year period, this group is the most stable of all the cohorts here investigated.

There are field differences in job mobility not depicted in tables here. Job-changing was tabulated by field for each five-year period, and those most prone to move and those most prone to stay were noted. Among the fields high in job-changing, across all periods, were psychology, sociology, economics, and political science. Among the natural sciences, physics and mathematics were high in mobility, but not as high as the social sciences noted above. Fields with relatively few job changes in the five periods examined were botany, zoology, genetics, and the medical and agricultural sciences. History and geography were relatively stable within the social-science group, and chemistry among the physical sciences. All of the arts and professions group, including education, were inclined to have fewer job changes than the average of all fields. The remainder of the fields were mixed in trend, or hovered closely about the median in tendency to change jobs.

The overall job stability recorded by these doctorate-holders is rather surprising, with fewer than one change in five years as a median for all cohorts in all periods except during and immediately after World War II. It may be that there is a bias here, due to selective forgetting or overlooking of minor or short-term jobs; it is possible that actual mobility is considerably greater than that reported on the questionnaires. It would require very extensive and careful individual investigation to determine whether there is such a bias, however, and this is beyond the scope of the present investigation. But whether it exists or not, it seems probable that it would not affect the relative trends shown in the tables as to degrees of stability in the various periods, by the several cohorts, or among the fields of specialization.

Occupational mobility may be across lines of specialization, as well as from region to region or job to job. Field-switching was examined to determine its extent from field of doctorate to field of the job held at the end of 1962, by cohort. The first general overall picture, however, is best obtained by a look at what may be called field-retention rates for all cohorts combined. Table 25 shows the percentage of people who did <u>not</u> switch fields over this period.

TABLE 25

Field-Retention Rates from Doctorate to Present Job

| Field of PhD | Percentage Remaining In Field | Field of PhD | Percentage Remaining In Field |
|---|---|---|---|
| Total, All Fields | 75.8 | Social Sciences | 79.3 |
| Basic Medical Sciences | 66.6 | Sociology | 70.7 |
| Physiology | 51.5 | Economics | 72.4 |
| Pharmacology | 52.0 | Political Science | 76.1 |
| Biochemistry | 56.0 | History-Geography | 77.6 |
| Microbiology | 68.8 | Mathematics | 88.6 |
| Other Bio-Sciences | 60.9 | Physical Sciences | 91.2 |
| Botany | 44.9 | Physics | 77.2 |
| Genetics | 47.4 | Chemistry | 76.2 |
| Zoology | 46.7 | Geo-sciences | 89.8 |
| Misc. Biology | 40.8 | | |
| Medical Sciences | 74.0 | Engineering | 87.6 |
| | | Languages & Literature | 82.6 |
| Agricultural Sciences | 79.3 | Arts and Humanities | 69.8 |
| Psychology | 81.2 | Professions | 72.7 |
| | | Education | 75.9 |

In Table 25, the summary fields, such as basic medical sciences, indicate shifts or failures to shift within these general fields, rather than the average of the subfields they include. Thus a person might shift from physiology to biochemistry and still remain within the basic medical sciences. He would be counted as shifting from physiology, but not from the basic-medical-sciences group. This accounts for the higher retention rates for the more inclusive groups than for the subfields. It can be seen by examing Table 25 that, within the medical-biological fields, the retention rates vary from a low of 40.8 per cent for the miscellaneous-biology field to a high of 74.0 per cent for the medical sciences. It is significant in this connection that, on the average, people in the latter field are older than the average of the biology fields at the time of the PhD; many of them have been in clinical practice. Some had prior MD degrees and a few had master's degrees in medicine also. Agricultural sciences, with its 79.3 per cent retention rate, is another field in which doctorate-holders are considerably older, and hence farther along in their careers at the time of the doctorate than is typical of the science fields. Within the biological fields, it appears that degree of specialization is an important factor in high retention rate. Thus, in spite of the narrowness of a field, the investment in specialized knowledge and skills seems to induce people to remain in their specialities; it appears easier, or at least more frequent, for people to move from a broad field such as botany than from a more specialized one such as microbiology.

Field-retention rates are higher in the social and physical sciences than in the bio-sciences. Two factors may help account for these differences. The social scientists are, on the average, older than the bio-scientists at the time of the doctorate. They may be thus farther along in their careers and hence less inclined to sacrifice the professional investment that field-shifting would require. For the physical scientists, it might well be that the growth of opportunities over the period covered by this report has been high and increasing, at least as compared with the opportunities in the biological sciences. It might be noted in this connection that a previous study comparing field of doctorate with field indicated in the National Register of Scientific and Technical Personnel (conducted within a limited number of fields) indicated that there is a general tendency to shift from the less prestigeous and less well-paid fields to those higher on the ladder of remuneration and prestige. The field-shifting here described may be interpreted in a similar fashion, as shown in more detail in Table 26, which indicates the fields to which people shifted who did not remain within their doctorate specialties.

In Table 26, field of doctorate is shown at the left, and field of present job is represented by the columns across the top of the table. Because of its width, this job-switching table has been divided into two sections. The first section gives detailed data within the biological field, and collapses the data for the other fields into a single column for the social sciences, one for the physical sciences, and one for all other fields. In the second section, the biological fields are collapsed into a single column, and detailed data are shown for the remaining fields. In both sections, the diagonal cells, which have been underlined, represent the field-retention data--those who have not changed fields.

Within the biological fields, the field-retention rate varies from a low of 40.8 per cent for the miscellaneous-biology field to a high of 74.0 per cent for the medical sciences. Other high-retention fields are microbiology and agriculture. Fields retaining fewer than 50.0 per cent are botany, genetics, and zoology. Among the non-biological fields, retention rates vary from a low of 69.8 per cent for the arts and humanities group to a high of 89.8 per cent for geological science and 88.6 per cent for mathematics. A high degree of specialization seems to be a positive factor for retention, particularly in the biological

TABLE 26

Field-Switching from Doctorate Degree to 1962 Job
Numbers of Cases, Total Group

| Field of Doctorate | Physiology | Pharmacology | Biochem. | Micro. | Botany | Genetics | Zoology | Misc. Bio | Agriculture | Med. Sci. | Soc. Sci Tot | Phys Sci Tot | Arts & Prof. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physiology | 275 | 20 | 29 | 8 | 2 | 2 | 18 | 21 | 28 | 96 | 1 | 17 | 16 | 533 |
| Pharmacol. | 2 | 79 | 2 | | | | | 3 | | 40 | 1 | 21 | 4 | 152 |
| Biochem. | 22 | 22 | 383 | 17 | | 5 | 1 | 10 | 47 | 41 | | 115 | 21 | 684 |
| Micro. | 17 | 1 | 23 | 351 | 6 | 4 | 2 | 12 | 16 | 35 | | 32 | 11 | 510 |
| Botany | 61 | 2 | 8 | 26 | 199 | 26 | 2 | 41 | 37 | 11 | | 11 | 19 | 443 |
| Genetics | 9 | | 3 | 3 | 7 | 73 | 2 | 9 | 39 | 3 | | 1 | 5 | 154 |
| Zoology | 99 | 4 | 9 | 17 | 5 | 8 | 244 | 72 | 16 | 22 | | 10 | 16 | 522 |
| Misc. Bio | 22 | 1 | 9 | 6 | 8 | 2 | 14 | 62 | 6 | 8 | 1 | 10 | 3 | 152 |
| Agric. | 14 | 1 | 14 | 3 | 12 | 14 | 6 | 4 | 387 | 5 | 10 | 41 | 22 | 533 |
| Med. Sci. | 11 | 7 | 6 | 10 | | | 3 | 4 | 1 | 188 | | 17 | 7 | 254 |

| | Bio-Sci Tot. | Psychology | Sociology | Economics | Pol. Sci. | Hist.-Geog. | Math | Physics | Chemistry | Geology | Engin. | Lang. & Lit. | Arts & Hum. | Prof. | Education | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychology | 12 | 379 | 2 | | 1 | 2 | 4 | | 8 | | 2 | 5 | | 10 | 42 | 467 |
| Sociology | 6 | 13 | 314 | 4 | 8 | 16 | | | 8 | | 1 | 4 | 11 | 35 | 24 | 444 |
| Economics | 4 | 3 | 1 | 315 | 6 | 2 | 8 | | 3 | | 1 | | 1 | 76 | 15 | 435 |
| Pol. Sci. | 1 | | 2 | 14 | 286 | 16 | | | 7 | | | 2 | | 26 | 22 | 376 |
| Hist.-Geog. | | 1 | | 4 | 15 | 347 | | 2 | 4 | 2 | | 9 | 6 | 23 | 34 | 447 |
| Math | 4 | | | 1 | | | 404 | 4 | 4 | 1 | 20 | | | 4 | 14 | 456 |
| Physics | 12 | | | | 2 | | 11 | 335 | 14 | 5 | 44 | | | 6 | 5 | 434 |
| Chemistry | 32 | 1 | | | | | 2 | 12 | 374 | 5 | 32 | | | 26 | 7 | 491 |
| Geology | 6 | | | 1 | | 2 | 6 | 5 | 3 | 387 | 10 | | | 4 | 7 | 431 |
| Engin. | 2 | 1 | | | | | 5 | 8 | 15 | 5 | 402 | | | 13 | 8 | 459 |
| Lang. & Lit. | 1 | 2 | | | 2 | 3 | 1 | | 5 | | 1 | 376 | 15 | 18 | 31 | 455 |
| Arts & Hum. | 5 | 6 | 4 | 1 | 3 | 3 | 3 | | 3 | | | 28 | 263 | 31 | 27 | 377 |
| Prof. | 3 | 9 | 4 | 22 | 8 | 13 | 1 | | 1 | | | 3 | 14 | 264 | 21 | 363 |
| Education | 5 | 30 | 4 | 2 | 1 | 5 | 9 | 2 | 5 | | | 8 | 7 | 17 | 299 | 394 |

fields. In all fields, age at doctorate seems to be a positive factor, as the fields with the highest retention rates have been found, in other studies, to be those with high average age at PhD. Whether this would hold for individuals is uncertain, but logical, and is supported by the evidence of field-switching for the three decade cohorts, shown in Appendix 15. In the appendix, the field arrangement is slightly different, but follows in general that of Table 26. However, both numbers of individuals and percentages are shown in the appendix, which gives the total field-switching for all cohorts combined, and for each one separately.

It would be of interest, in this connection, to compare the field-switching between the B.A. degree and the Ph.D. with that which occurs between the Ph.D. and later on-the-job experience. This might be done for fields in a statistical way, and also for individuals, to see whether those who switch between baccalaureate and doctorate level become stabilized, tend to switch back to the field of first choice, or move on to still different fields.

Chapter 6

# WOMEN DOCTORATE-HOLDERS

The analyses up to this point have concerned doctorate-holders of both sexes; as the great majority of them are male, the data refer primarily to males. Because of the importance of women in the development of science and in teaching, it is necessary to make separate tabulations based on the data on women alone to be sure that issues on which sex differences may appear are examined for the direction and extent of such differences. Slightly over 1 in

TABLE 27

EMPLOYERS OF WOMEN DOCTORATE-HOLDERS

| | | PERCENT IN EACH EMPLOYER CATEGORY | | | | | |
|---|---|---|---|---|---|---|---|
| | | TOTAL | | | | | |
| COHORT | FIELD | NUMBER | PERCENT | COLLEGE & UNIV | BUS, IND. | U.S. GOVT | ALL OTHER EMPLOYERS |
| ALL | TOTAL, ALL FIELDS | 1053 | 99.9 | 65.5 | 3.8 | 7.0 | 23.6 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 330 | 100.0 | 57.6 | 3.3 | 6.7 | 32.4 |
| | BIO-AG-MED, TOTAL | 137 | 100.0 | 54.0 | 5.1 | 9.5 | 31.4 |
| | BASIC MED. SCIENCES | 78 | 100.0 | 51.3 | 6.4 | 12.8 | 29.5 |
| | ALL OTHER BIO FIELDS | 59 | 100.0 | 57.6 | 3.4 | 5.1 | 33.9 |
| | PSYCHOLOGY | 35 | 100.0 | 34.3 | 5.7 | 5.7 | 54.3 |
| | SOCIAL SCIENCES | 62 | 100.1 | 56.5 | | 6.5 | 37.1 |
| | M-P-E FIELDS | 26 | 99.9 | 69.2 | 3.8 | 3.8 | 23.1 |
| | ALL OTHER FIELDS | 70 | 100.1 | 72.9 | 1.4 | 2.9 | 22.9 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 374 | 100.0 | 68.7 | 4.3 | 6.7 | 20.3 |
| | BIO-AG-MED, TOTAL | 146 | 99.9 | 67.1 | 4.1 | 6.8 | 21.9 |
| | BASIC MED. SCIENCES | 76 | 100.0 | 68.4 | 6.6 | 5.3 | 19.7 |
| | ALL OTHER BIO FIELDS | 70 | 100.0 | 65.7 | 1.4 | 8.6 | 24.3 |
| | PSYCHOLOGY | 37 | 100.0 | 56.8 | 8.1 | 5.4 | 29.7 |
| | SOCIAL SCIENCES | 59 | 100.0 | 67.8 | | 6.8 | 25.4 |
| | M-P-E FIELDS | 31 | 100.0 | 64.5 | 16.1 | 9.7 | 9.7 |
| | ALL OTHER FIELDS | 101 | 100.0 | 77.2 | 2.0 | 5.9 | 14.9 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 349 | 99.9 | 69.6 | 3.7 | 7.7 | 18.9 |
| | BIO-AG-MED, TOTAL | 144 | 100.1 | 67.4 | 2.8 | 11.1 | 18.8 |
| | BASIC MED. SCIENCES | 87 | 100.0 | 71.3 | 3.4 | 9.2 | 16.1 |
| | ALL OTHER BIO FIELDS | 57 | 100.0 | 61.4 | 1.8 | 14.0 | 22.8 |
| | PSYCHOLOGY | 20 | 100.0 | 45.0 | 5.0 | 5.0 | 45.0 |
| | SOCIAL SCIENCES | 64 | 100.0 | 73.4 | 1.6 | 10.9 | 14.1 |
| | M-P-E FIELDS | 27 | 100.0 | 59.3 | 18.5 | 7.4 | 14.8 |
| | ALL OTHER FIELDS | 94 | 100.0 | 78.7 | 2.1 | 1.1 | 18.1 |

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

10 of the doctorate-holders included in the present study were women. This approximates the proportion found in the total doctorate population from which the samples in the present study were drawn. While too few for analyses as elaborate as those employed with the entire group, the women are of sufficient importance in the general economic scheme to warrant special treatment. A number of studies have been made by various researchers of women in science, and a great deal of attention has been devoted to the problems of career development that are induced by the fact that a great many women doctorate-holders withdraw from the professional labor force during a period of child-rearing, and may or may not return later. The present chapter will be concerned with the employers of women doctorate-holders, the geographic migrations of this group, and with the distribution of their time among various on-the-job functions.

Employers of women doctorate-holders are shown in Table 27, with field break-outs condensed from those used in previous chapters to accumulate sufficiently large numbers for statistical reliabilty. As compared with men (see Chapter 1, Table 4 for total group, predominently male), the women are concentrated more heavily in college and university jobs, and, for the oldest cohort, in the "all other" employer category. They are found in business and industrial employment only rarely, as compared with men. The field distribution accounts for these differences in large part, as women are more numerous in biology, and less so in the physical sciences than men.

## Geographic Location and Migration

Geographic migration for unmarried women PhD's is presumably relatively free, as compared with that for their married colleagues, who, regardless of their educational status, tend to migrate according to the requirements of their husbands' jobs. For this reason, the tabluations that follow will present data separately for the single women and for those who were married at the time of the questionnaire, or had at any time been married. Table 28 shows the geographic location of these two groups, and for reference purposes, of the total group (predominantly male) at three career stages. The data are percentages of each group in each geographic region at each career stage. The regions used are the nine census regions; these have also been grouped into the five general areas described in Chapter 1: New England, Middle Atlantic, Midwest, South, and West.

Examination of the three columns for the groups based on sex and marital status indicates that there are important regional differences. Some regions (New England, East and West South Central regions, and Pacific states) are relatively low in production of women doctorates; other regions (Middle and South Atlantic) are higher than average in this respect. When marital status differences for the women are examined, it is to be observed that New England and the South Central states are particularly low in percentage of women doctorate-holders who remain single; the Middle Atlantic, South Atlantic, and West North Central regions are high in this category. The reasons for these latter variations need further examination.

Migration from region of doctorate to region of immediate postdoctoral job and eventually to present job may be looked at in terms of the percentage change induced by the migration. This is done in Table 29, in which the number of doctorate-holders in each of the regions of later jobs is expressed as a percentage of the number obtaining their doctorates in the same region. Thus, if a region loses from doctorate to first job, its percentage will be less than 100.0 per cent; if it gains, the percentage will be over 100.0 per cent. The further net change to the time of present job is indicated in the third section of Table 29. The first section, which gives numbers of persons attaining doctorates in each region, of course always represents 100 per cent for each region and doctorate category.

TABLE 28

Regional Distribution of Doctorate-Holders at Three Career Stages; Total of Men + Women, Married Women, and Single Women

| Geographic Region | Region of Doctorate | | | Region of First Postdoctoral Job | | | Region of Present Job | | |
|---|---|---|---|---|---|---|---|---|---|
| | All PhD's | Women Marr. | Women Single | All PhD's | Women Marr. | Women Single | All PhD's | Women Marr. | Women Single |
| New England | 13.1 | 12.3 | 7.3 | 8.6 | 10.0 | 8.1 | 7.3 | 8.3 | 6.9 |
| Middle Atlantic | 22.2 | 27.1 | 25.9 | 20.1 | 23.7 | 22.1 | 19.7 | 24.5 | 23.1 |
| East N. Central | 28.9 | 28.3 | 28.7 | 19.0 | 18.3 | 22.5 | 17.8 | 17.4 | 19.5 |
| West N. Central | 11.5 | 8.1 | 13.9 | 8.6 | 6.2 | 10.7 | 7.2 | 4.1 | 9.6 |
| Midwest | 40.4 | 36.4 | 42.6 | 27.6 | 24.5 | 33.2 | 25.0 | 21.5 | 29.1 |
| South Atlantic | 8.4 | 8.6 | 12,6 | 13.4 | 12.3 | 11.1 | 15.3 | 16.2 | 14.3 |
| E. South Central | 1.1 | 1.2 | .6 | 3.6 | 2.6 | 2.8 | 3.2 | 1.7 | 2.1 |
| W. South Central | 2.8 | 3.1 | 1.5 | 6.2 | 5.4 | 5.8 | 5.6 | 4.3 | 4.9 |
| South | 12.2 | 12.9 | 14.7 | 23.2 | 20.3 | 19.7 | 24.1 | 22.2 | 21.3 |
| Mountain | 1.3 | 1.7 | .6 | 4.2 | 2.6 | 3.4 | 4.2 | 2.4 | 2.4 |
| Pacific | 10.8 | 9.5 | 8.8 | 10.6 | 9.8 | 8.6 | 14.1 | 13.6 | 12.4 |
| West | 12.1 | 11.2 | 9.4 | 14.8 | 12.4 | 12.0 | 18.3 | 16.0 | 14.8 |

In general, the net migration percentages for the married women are closer to the data for all PhD's (predominantly men) than are the percentages for single women. The variations by sex, ignoring marital status, are also of interest. New England loses a smaller percentage of women than of men; the South gains fewer. The West gains more single women but fewer married women. A reasonable hypothesis here would be that married women, whether they hold doctorates or not, tend to migrate according to their husbands' occupational opportunities rather than their own, whereas the single women migrate according to job opportunities for themselves--primarily in teaching. A subsequent section of this report indicates that single women spend their professional time primarily in teaching. The best opportunities in teaching for women doctorate-holders might well be expected to be in the Northeast and in California. The combination of these two factors, teaching opportunities for single women and husband-conditioned migration for married women, would go far toward explaining the geographic flows indicated in Table 29.

TABLE 29

Net Change in Doctorate Population by Geographic Area as a Result of Migration from Region of Doctorate to Subsequent Jobs

| Region of Doctorate | Number of Doctorates Granted Per Region | | | Net Percentage Change Due to Migration | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | First Postdoctoral Job | | | Present Job | | |
| | All PhD's | Women | | All PhD's | Women | | All PhD's | Women | |
| | | Marr. | Single | | Marr. | Single | | Marr. | Single |
| New England | 1316 | 58 | 38 | 65.6 | 81.3 | 110.0 | 55.7 | 67.5 | 94.5 |
| Mid. Atlantic | 2220 | 137 | 103 | 90.5 | 87.5 | 85.3 | 88.7 | 90.4 | 89.2 |
| Midwest | 4045 | 142 | 155 | 68.3 | 67.3 | 78.4 | 61.9 | 59.1 | 68.3 |
| South | 1222 | 117 | 92 | 190.2 | 157.4 | 134.0 | 197.5 | 172.1 | 144.9 |
| West | 1214 | 72 | 56 | 122.3 | 110.7 | 127.7 | 151.2 | 143.9 | 157.4 |

A third look at geographic migration for women doctorate-holders is afforded by consideration of the percentage of married and of single women who stay in the same region from doctorate to first postdoctoral job, and then from first postdoctoral job to present job, by decade of doctorate. This information is provided by Table 30, for the nine census regions of the United States. Data are given for each region for the combination of all three decade cohorts; in the separate decades, the data are not broken out for those regions in which the numbers are too small to justify comparisons; this includes the foreign region for the first postdoctoral-to-present job move.

The data of Table 30 indicate that the number remaining in a given region from doctorate to first postdoctoral job, or from first to present job is far from accounting adequately for the net-migration data--the "movers" are nearly as numerous as the "stayers." As between married and single women, there is no marked trend on the first move following the doctorate; with regard to migration from first to present job, the single women are far more stable--another indication that their jobs may be holding them, whereas the married women move with their husbands, for whom job opportunities are probably more frequent, and for whom inter-regional moves are known to be more frequent.

TABLE 30

Percentage of Women Remaining in Each Geographic Region at Two Career Choice Points, by Decade Cohort

| Region of Doctorate | All Cohorts Marr. | All Cohorts Single | Cohort 1935-40 Marr. | Cohort 1935-40 Single | Cohort 1945-50 Marr. | Cohort 1945-50 Single | Cohort 1955-60 Marr. | Cohort 1955-60 Single |
|---|---|---|---|---|---|---|---|---|
| | Doctorate to First Postdoctoral Job | | | | | | | |
| New England | 47 | 44 | 29 | 55 | 50 | 40 | 58 | 38 |
| Middle Atlantic | 62 | 50 | 66 | 64 | 58 | 42 | 61 | 43 |
| East N. Central | 43 | 51 | 27 | 51 | 45 | 60 | 56 | 40 |
| West N. Central | 28 | 43 | 23 | 58 | 36 | 36 | 17 | 32 |
| South Atlantic | 54 | 36 | 30 | 32 | 52 | 40 | 71 | 36 |
| East S. Central | 57 | 67 | - | - | - | - | - | - |
| West S. Central | 89 | 71 | - | - | - | - | - | - |
| Mountain | 50 | 67 | - | - | - | - | - | - |
| Pacific | 66 | 68 | 62 | 67 | 60 | 82 | 73 | 60 |
| | First Postdoctoral to Present Job | | | | | | | |
| New England | 53 | 42 | 50 | 10 | 40 | 47 | 74 | 64 |
| Middle Atlantic | 71 | 70 | 67 | 59 | 70 | 70 | 80 | 81 |
| East N. Central | 54 | 65 | 57 | 67 | 48 | 68 | 58 | 57 |
| West N. Central | 36 | 58 | 40 | 38 | 27 | 67 | 46 | 79 |
| South Atlantic | 73 | 75 | 60 | 87 | 71 | 87 | 87 | 59 |
| East S. Central | 27 | 46 | - | - | - | - | - | - |
| West S. Central | 58 | 59 | - | - | - | - | - | - |
| Mountain | 47 | 31 | - | - | - | - | - | - |
| Pacific | 70 | 83 | 64 | 92 | 77 | 78 | 67 | 77 |
| Foreign | 71 | 85 | - | - | - | - | - | - |

## On-The-Job Functions

In the labor force as a whole, there are marked functional differences between the work performed by men and by women. In the field of business, there are few women executives; in school teaching, women predominate in the elementary grades, but less so in secondary school, while at the college level men teachers predominate. The question of interest in the present study is whether women doctorate-holders perform markedly different on-the-job functions than men, and whether, among the women, there are differences related to marital status. The data of primary relevance in relation to this question are found in Table 31. In this table, the data for the whole doctorate population (predominantly men) are presented in parentheses for purposes of comparison. Data for the women who are, or have been, married are presented separately from those for the single women doctorate-holders; and for all of these groups, the three decade cohorts are shown separately. The top portion of Table 31 presents data regarding teaching, the middle portion regarding research, and the bottom portion regarding administration. In each section, the doctorate-holders are divided into those with no time spent on the given function, some time (10-29 per cent), a moderate portion (30-49 per cent), much time (50-89 per cent), or practically full time (90-100 per cent). These are the same time distribution categories as used regarding all doctorates in Chapter 2.

The primary comparison in time distribution is between the total group, which is chiefly men, and the women. The top portion of Table 31 shows that women doctorate-holders spend considerably more time in teaching than do men. Fewer in each cohort have no teaching responsibilities or only minor teaching loads. More have heavy teaching loads; from two to three times as high a proportion spend practically full time teaching.

The sex differences are not as marked with respect to research as they are with respect to teaching, but they are clear, nevertheless. Proportionately more women do no research, but more also devote full time to research; fewer spend a moderate amount of their time on research. This peculiarity of time distribution may be accounted for on two bases: men are more heavily engaged in administration, and more men are in academic situations in which they can combine teaching and research. It seems probable that a number of the women who are engaged full or almost full time in research are working in laboratories under the direction of others, rather than directing their own research programs. Although the data here do not directly indicate that this is the case, general observation tends to bear out this hypothesis.

The disparity in administration between men and women is most striking. More men, proportionately (by a factor ranging from 2 to 5) are heavily engaged in administration, and a much smaller proportion of men are entirely free of administrative responsibilities.

The variation in functions from cohort to cohort is particularly informative, and it is here that the differences between the married and the single women come into prominence. The single women, presumably because of their more consistent professional careers, get farther up the administrative ladder than do the married women, more than half of whom do no administrative work at all. The latter proportion is highest in the oldest cohort, quite opposite to the trend of the men and the single women. Even the spinsters, however, have less administrative work than the men; only 4 per cent of each group have full-time administrative duties in the youngest cohort, while in the oldest cohort this is only increased to 6 per cent. By contrast, for the total group (mostly men) the proportion is 15 per cent. At the level where a major portion (50-89 per cent) of time is devoted to administration, the percentages are essentially equal for men and single women in the youngest cohort; in the oldest cohort, the difference is two-to-one. For the married women, the percentages with heavy administrative responsibilities are consistently smaller than for the single women. It seems probable that what is happening here is that the career disruption for child-rearing has had a pronounced effect on functions performed when the married women return to professional work. They have returned to professional jobs that tend to be either teaching

TABLE 31

Time Distribution among Teaching, Research, and Administrative Functions for All Doctorate-Holders, Single Women, and Married Women, by Cohort

| Cohort | Marital Status & Sex | Total Group Number | Total Group Per cent | Amount of Time Spent on Each Function: None | Some* | Mod.* | Much* | Full* |
|---|---|---|---|---|---|---|---|---|
| | | | | TEACHING | | | | |
| 1935-1940 | ALL, M + F | -- | 100 | (39) | (15) | (16) | (22) | ( 8) |
| | Single F | 131 | 100 | 27 | 9 | 9 | 37 | 18 |
| | Married F | 141 | 100 | 31 | 10 | 11 | 19 | 29 |
| 1945-1950 | ALL, M + F | -- | 100 | (33) | (17) | (19) | (24) | ( 7) |
| | Single F | 149 | 100 | 20 | 13 | 13 | 39 | 15 |
| | Married F | 190 | 100 | 32 | 11 | 9 | 23 | 25 |
| 1955-1960 | ALL, M + F | -- | 100 | (33) | (16) | (18) | (27) | ( 7) |
| | Single F | 146 | 100 | 20 | 14 | 17 | 38 | 11 |
| | Married F | 174 | 100 | 38 | 12 | 9 | 22 | 19 |
| | | | | RESEARCH | | | | |
| 1935-1940 | ALL, M + F | -- | 100 | (34) | (22) | (19) | (17) | ( 8) |
| | Single F | 131 | 100 | 44 | 24 | 18 | 5 | 9 |
| | Married F | 141 | 100 | 52 | 11 | 7 | 17 | 13 |
| 1945-1950 | ALL, M + F | -- | 100 | (25) | (24) | (20) | (22) | ( 9) |
| | Single F | 149 | 100 | 35 | 30 | 11 | 12 | 12 |
| | Married F | 190 | 100 | 43 | 14 | 12 | 16 | 15 |
| 1955-1960 | ALL, M + F | -- | 100 | (16) | (20) | (18) | (27) | (19) |
| | Single F | 146 | 100 | 35 | 26 | 14 | 12 | 13 |
| | Married F | 174 | 100 | 24 | 24 | 5 | 16 | 31 |
| | | | | ADMINISTRATION | | | | |
| 1935-1940 | ALL, M + F | -- | 100 | (33) | (21) | (14) | (18) | (15) |
| | Single F | 131 | 100 | 47 | 30 | 8 | 9 | 6 |
| | Married F | 141 | 100 | 72 | 9 | 8 | 8 | 3 |
| 1945-1950 | ALL, M + F | -- | 100 | (35) | (26) | (13) | (16) | (11) |
| | Single F | 149 | 100 | 52 | 23 | 10 | 10 | 5 |
| | Married F | 190 | 100 | 63 | 21 | 4 | 7 | 5 |
| 1955-1960 | ALL, M + F | -- | 100 | (50) | (29) | (10) | ( 8) | ( 4) |
| | Single F | 146 | 100 | 51 | 29 | 9 | 7 | 4 |
| | Married F | 174 | 100 | 68 | 21 | 5 | 5 | 1 |

* Some = 10%-29%; Moderate = 30%-49%; Much = 50%-89%; Full = 90%-100%
Percentages may not add to 100% because of rounding.

## TABLE 32

### Interrelations of Teaching, Research, and Administration on Present Job Women Doctorate-Holders, by Decade Cohorts

| Reference Category | Cohort | Total Cases | | Percentage of Cases in Each Category of Research Activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | None | | Some* | | Mod.* | | Much* | | Full* | |
| | | Single | Marr. | Single | Marr. | Single | Marr. | Single | Marr. | Single | Marr. | Single | Marr. |
| Total Group | 35-40 | 131 | 141 | 44 | 52 | 24 | 11 | 18 | 7 | 5 | 17 | 9 | 13 |
| | 45-50 | 149 | 190 | 35 | 43 | 30 | 14 | 11 | 12 | 12 | 16 | 12 | 15 |
| | 55-60 | 146 | 174 | 35 | 24 | 26 | 24 | 14 | 5 | 12 | 16 | 13 | 31 |
| Teaching Activity: None | 35-40 | 35 | 43 | 54 | 42 | 11 | 7 | 6 | 2 | 3 | 9 | 26 | 40 |
| | 45-50 | 30 | 61 | 33 | 28 | 3 | 12 | 7 | 3 | 7 | 16 | 50 | 41 |
| | 55-60 | 29 | 66 | 28 | 9 | 7 | 3 | - | 2 | 10 | 12 | 55 | 74 |
| Teaching Activity: Some* | 35-40 | 11 | 15 | 9 | 20 | 46 | 27 | 42 | 13 | 18 | 33 | 27 | 7 |
| | 45-50 | 19 | 20 | 16 | 25 | 37 | 20 | 11 | - | 21 | 40 | 16 | 15 |
| | 55-60 | 20 | 21 | 35 | 10 | 20 | 29 | 5 | 10 | 25 | 29 | 15 | 24 |
| Teaching Activity: Mod.* | 35-40 | 12 | 16 | 25 | 38 | 25 | 6 | 33 | 13 | 8 | 44 | | |
| | 45-50 | 20 | 18 | 25 | 22 | 25 | - | 5 | 39 | 45 | 39 | | |
| | 55-60 | 25 | 15 | 20 | 7 | 20 | 33 | 32 | 7 | 28 | 53 | | |
| Teaching Activity: Much* | 35-40 | 49 | 26 | 31 | 42 | 33 | 8 | - | 19 | 2 | 31 | | |
| | 45-50 | 58 | 44 | 28 | 25 | 47 | 32 | 21 | 30 | 5 | 14 | | |
| | 55-60 | 56 | 39 | 30 | 15 | 45 | 54 | 20 | 13 | 5 | 18 | | |
| Teaching Activity: Full* | 35-40 | 24 | 41 | 83 | 85 | 17 | 14 | | | | | | |
| | 45-50 | 22 | 47 | 82 | 96 | 18 | 4 | | | | | | |
| | 55-60 | 16 | 33 | 88 | 79 | 12 | 21 | | | | | | |
| | | | | Administrative Activity | | | | | | | | | |
| Total Group | 35-40 | 131 | 141 | 47 | 72 | 30 | 9 | 8 | 8 | 9 | 8 | 6 | 3 |
| | 45-50 | 149 | 190 | 52 | 63 | 23 | 21 | 10 | 4 | 10 | 7 | 5 | 5 |
| | 55-60 | 146 | 174 | 51 | 68 | 29 | 21 | 9 | 5 | 7 | 5 | 4 | 1 |
| Research Activity: None | 35-40 | 44 | 52 | 52 | 72 | 17 | 7 | 10 | 6 | 9 | 10 | 12 | 6 |
| | 45-50 | 35 | 43 | 52 | 71 | 12 | 12 | 6 | 2 | 17 | 5 | 14 | 10 |
| | 55-60 | 35 | 24 | 45 | 76 | 20 | 7 | 8 | 5 | 18 | 7 | 10 | 5 |
| Research Activity: Some* | 35-40 | 24 | 11 | 28 | 56 | 44 | 6 | 6 | 12 | 19 | 25 | 3 | - |
| | 45-50 | 30 | 14 | 36 | 37 | 32 | 41 | 18 | 7 | 14 | 7 | - | 7 |
| | 55-60 | 26 | 24 | 26 | 49 | 53 | 39 | 16 | 7 | 3 | 5 | 3 | - |
| Research Activity: Mod.* | 35-40 | 18 | 7 | 30 | 50 | 57 | 10 | 9 | 40 | 4 | - | | |
| | 45-50 | 11 | 12 | 41 | 45 | 41 | 36 | 18 | 9 | - | 9 | | |
| | 55-60 | 14 | 5 | 50 | 44 | 35 | 22 | 15 | 22 | - | 11 | | |
| Research Activity: Much* | 35-40 | 5 | 17 | 67 | 75 | 33 | 21 | - | 4 | - | - | | |
| | 45-50 | 12 | 16 | 61 | 48 | 33 | 29 | 6 | 7 | - | 16 | | |
| | 55-60 | 12 | 16 | 67 | 48 | 28 | 41 | 6 | 3 | - | 7 | | |
| Research Activity: Full* | 35-40 | 9 | 13 | 100 | 94 | - | 6 | | | | | | |
| | 45-50 | 12 | 15 | 94 | 92 | 6 | 7 | | | | | | |
| | 55-60 | 13 | 31 | 100 | 92 | - | 7 | | | | | | |

* Definitions of Categories of Time Spent In Each Function:
Some = 10%-29% Moderate = 30%-49% Much = 50%-89% Full = 90%-100%

or research, but less frequently the balanced combination of teaching, research, and administration that is more characteristic of the men and of those women whose professional careers have been uninterrupted. Table 32 shows some of the interrelations of teaching, research, and administration for the women doctorate-holders, by decade cohort and marital status. In the oldest cohort in Table 32, a substantial number of single women spend over 50 per cent of their time in teaching, but also up to 40 per cent of their time in research. This "balanced load" group is markedly thinned in the married women's tabulation, with a much higher concentration in the 50 to 100 per cent range in research functions. In the bottom portion of Table 32, it may be noted that, for almost every group sorted by time spent on research, the married group is higher in the "no research" category, and the single group generally higher in the categories spending "much" or "full" time in administration.

For a more detailed analysis of the process by which the distribution of time among various functions came about, the women bio-scientists were selected for a more intensive study of the relation between the first postdoctoral job and the present job. The results will be summarized verbally; the tables are not reproduced in this report.

There was a sizeable group of married women who did no teaching on the first postdoctoral job, but who were engaged almost exclusively in research. Most of this group are now devoting practically full time to research. For the single women, this tends also to be true, although not so strongly; more of the single group are doing a moderate amount of research combined with teaching. There is thus a greater polarization of function for the married women, to some extent indicated in the first postdoctoral job, but more pronounced on the present job. To illustrate, there were 70 married women who, on their first postdoctoral jobs, did no research or only a minor amount (20 per cent or less time). Of these 70, there are now 37 who devote 50 to 100 per cent of their time to teaching, and 21 who do no teaching. There were also 70 married women who did research 90 to 100 per cent of the time. Of the latter group, 22 are now teaching 50 to 100 per cent; 47 do no teaching. There were 67 single women who were devoting 90 to 100 per cent of their time to research on their first jobs; 31 of these do no teaching now, while 14 have heavy teaching loads.

Chapter 7

# EARNINGS OF DOCTORATE-HOLDERS

Graduate education can hardly be evaluated on the basis of the increased earning power of those who have acquired this training, but their earnings are nevertheless a matter of great moment, not only to the individuals involved, but also to those who are concerned with manpower problems generally. For a great many, if not most of the doctorate-holders, the motivation for their advanced study was no doubt more intellectual than monetary. And yet when economic differentials become large, they can be important in influencing or even determining manpower flows. The final chapter of this report will therefore briefly describe the earnings of the people included in this study, by graduation cohorts, by fields of specialization, and by the types of functions performed on the job.

Table 33, in two parts on the next two pages, provides the basic information on present earnings. More detailed data, by subfields and by five-year graduation cohorts, are to be found in Appendix 17. The data of Table 33 and Appendix 17 are geometric means of salaries.The geometric mean is the mean of the common logarithms of the dollar values, and here is re-converted from the logarithm to the antilog, and thus back to the dollar scale. The geometric mean was used,rather than the arithmetic mean, as it reduces the influence of the extreme values, and converts the salary scale to one that yields a more nearly normal distribution than does the original scale value of dollars. The resulting values should be rather close to what would have been found if medians had been used, but have the advantage of being more readily dealt with by computer techniques. In addition, the geometric mean includes the influence of all the cases in the group, but with a moderating influence on the extremes. In brief, these values are probably as representative a statistic as it is possible to provide with data such as salaries.

Table 33 is set up to reflect the different functions performed by the doctorate-holders in the several fields. Part 1 of Table 33 includes four groups: those who divide their time equally between research and teaching; those who devote their time primarily to teaching; those who primarily do administration; and those primarily concerned with research. Part 2 of Table 33 includes the small group of people who divide their time equally between research and administration; the still smaller group who spend half time in teaching and half in administration; a rather large group whose functions are mixed in ways other than the six groups already described; and finally, a group for whom on-the-job functions were not known. The fields are those that have been used extensively heretofore in this report; the cohorts are the familiar decade groups.

One of the most striking differences in salaries shown in Table 33 concerns on-the-job function. Across almost all fields and cohorts, those who are spending most time in teaching are receiving the least pay; the administrators are receiving the highest pay. The various functional groups may readily be compared on a percentage differential basis, with the "teacher" group as the reference point of 100. The other groups, in ascending order of relative pay are as follows: (a) the teacher-researchers, 111; (b) the researchers, 118; (c) the teacher-administrators, 125; (d) the "unknown's", 132; (e) the mixed group, 134; (f) the researcher-administrators, 159; and finally (g) the administrators, 162. Although there are some variations, this hierarchy tends to hold across all cohorts and all fields.

Field differences are marked also, but these tend to be confounded by the function differentials; an administrator in the "all other fields" category, for example, may be a dean in a small liberal arts college; and administrator in engineering is likely to be in charge of an expensive and commercially important installation. A result of this is that the field differential between engineering and "all other fields" is small in teaching (23 per cent) but large in administration (70 per cent), to choose just one example from the oldest cohort. For this reason, it is important in making field comparisons to keep in mind both functional and cohort variations. Yet, for

TABLE 33, Part A
Geometric Mean of Salaries on Present Job, by
Major Function Performed, Fields, and Cohorts

| | | Teaching 50% Research 50% | | Teaching 50% or More | | Admin. 50% or More | | Research 50% or More | |
|---|---|---|---|---|---|---|---|---|---|
| COHORT | FIELD | NO. | MEAN | NO. | MEAN | NO. | MEAN | NO. | MEAN |
| ALL | TOTAL, ALL FIELDS | 318 | $11,167 | 2258 | $10,021 | 1542 | $16,281 | 2464 | $11,832 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 74 | 12,357 | 578 | 11,154 | 633 | 18,136 | 439 | 14,405 |
| | BIO-SCIENCES, TOTAL | 27 | 10,435 | 139 | 9,852 | 198 | 17,734 | 213 | 13,393 |
| | BASIC MED. SCIENCES | 11 | 8,691 | 68 | 10,405 | 121 | 18,155 | 135 | 14,210 |
| | OTHER BIO-SCIENCES | 16 | 11,832 | 71 | 9,349 | 77 | 17,096 | 78 | 12,089 |
| | MEDICAL SCIENCES | | | 4 | 13,884 | 14 | 17,580 | 3 | 14,679 |
| | AGRIC. SCIENCES | 6 | 10,392 | 9 | 10,910 | 41 | 16,587 | 34 | 13,344 |
| | PSYCHOLOGY | 3 | 15,728 | 23 | 11,378 | 31 | 17,612 | 14 | 10,787 |
| | SOCIAL SCIENCES | 13 | 11,749 | 141 | 12,131 | 83 | 17,171 | 51 | 16,671 |
| | MATHEMATICS | 2 | 17,580 | 37 | 12,160 | 34 | 20,739 | 14 | 19,661 |
| | PHYSICAL SCIENCES | 5 | 13,740 | 64 | 10,742 | 107 | 20,306 | 74 | 16,252 |
| | ENGINEERING | 5 | 22,081 | 11 | 13,804 | 43 | 25,000 | 12 | 15,910 |
| | ALL OTHER FIELDS | 13 | 13,756 | 150 | 11,240 | 82 | 14,832 | 24 | 14,468 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 82 | 12,855 | 642 | 10,562 | 562 | 16,080 | 611 | 13,814 |
| | BIO-SCIENCES, TOTAL | 28 | 9,975 | 136 | 9,870 | 116 | 15,684 | 250 | 12,789 |
| | BASIC MED. SCIENCES | 13 | 10,125 | 52 | 10,644 | 69 | 16,440 | 145 | 13,264 |
| | OTHER BIO-SCIENCES | 15 | 9,847 | 84 | 9,419 | 47 | 14,641 | 105 | 12,162 |
| | MEDICAL SCIENCES | 3 | 15,606 | 4 | 5,219 | 14 | 17,726 | 12 | 18,164 |
| | AGRIC. SCIENCES | 7 | 11,445 | 17 | 11,717 | 34 | 15,657 | 64 | 12,687 |
| | PSYCHOLOGY | 4 | 16,691 | 30 | 12,656 | 30 | 16,218 | 27 | 13,721 |
| | SOCIAL SCIENCES | 13 | 17,254 | 180 | 10,565 | 88 | 14,538 | 55 | 14,239 |
| | MATHEMATICS | 8 | 18,621 | 38 | 11,419 | 17 | 18,273 | 29 | 19,544 |
| | PHYSICAL SCIENCES | 8 | 15,401 | 55 | 10,927 | 109 | 18,686 | 117 | 15,087 |
| | ENGINEERING | 2 | 13,031 | 11 | 11,577 | 44 | 20,003 | 22 | 17,271 |
| | ALL OTHER FIELDS | 9 | 10,337 | 171 | 10,500 | 110 | 13,759 | 35 | 11,858 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 162 | 9,929 | 1038 | 9,140 | 347 | 13,648 | 1414 | 10,415 |
| | BIO-SCIENCES, TOTAL | 59 | 9,501 | 254 | 8,670 | 75 | 12,963 | 763 | 9,759 |
| | BASIC MED. SCIENCES | 40 | 9,661 | 110 | 8,640 | 49 | 13,344 | 503 | 10,163 |
| | OTHER BIO-SCIENCES | 19 | 9,164 | 144 | 8,693 | 26 | 12,269 | 260 | 9,020 |
| | MEDICAL SCIENCES | 2 | 11,885 | 19 | 10,766 | 19 | 16,555 | 28 | 11,220 |
| | AGRIC. SCIENCES | 8 | 9,661 | 26 | 9,433 | 15 | 13,592 | 110 | 10,157 |
| | PSYCHOLOGY | 4 | 9,718 | 23 | 9,932 | 10 | 17,179 | 34 | 10,869 |
| | SOCIAL SCIENCES | 34 | 10,130 | 276 | 9,228 | 62 | 13,264 | 115 | 10,959 |
| | MATHEMATICS | 14 | 10,048 | 65 | 10,053 | 12 | 16,062 | 61 | 13,151 |
| | PHYSICAL SCIENCES | 20 | 10,081 | 74 | 9,392 | 43 | 14,362 | 208 | 11,751 |
| | ENGINEERING | 8 | 11,220 | 24 | 10,892 | 18 | 14,942 | 51 | 13,532 |
| | ALL OTHER FIELDS | 13 | 10,251 | 277 | 8,892 | 93 | 12,787 | 44 | 8,348 |

TABLE 33, Part B
Geometric Mean of Salaries on Present Job, by
Major Function Performed, Fields, and Cohorts

| | | Admin. 50% Research 50% | | Teaching 50% Admin. 50% | | All Others | | Function Unknown | |
|---|---|---|---|---|---|---|---|---|---|
| COHORT | FIELD | NO. | MEAN | NO. | MEAN | NO. | MEAN | NO. | MEAN |
| ALL | TOTAL, ALL FIELDS | 176 | $15,922 | 74 | $12,569 | 1502 | $13,467 | 451 | $13,236 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 62 | 18,389 | 30 | 13,582 | 473 | 15,682 | 164 | 14,649 |
| | BIO-SCIENCES, TOTAL | 16 | 16,789 | 8 | 13,647 | 134 | 15,882 | 39 | 14,662 |
| | BASIC MED. SCIENCES | 12 | 15,728 | 1 | 18,198 | 86 | 16,322 | 27 | 17,230 |
| | OTHER BIO-SCIENCES | 4 | 20,418 | 7 | 13,095 | 48 | 15,121 | 12 | 10,193 |
| | MEDICAL SCIENCES | 2 | 13,645 | | | 20 | 17,319 | 3 | 7,763 |
| | AGRIC, SCIENCES | 4 | 13,259 | | | 29 | 12,580 | 7 | 18,621 |
| | PSYCHOLOGY | 2 | 23,715 | 1 | 7,079 | 41 | 16,505 | 4 | 10,292 |
| | SOCIAL SCIENCES | 6 | 18,980 | 9 | 13,945 | 74 | 16,015 | 30 | 13,122 |
| | MATHEMATICS | 4 | 18,729 | 3 | 13,592 | 14 | 18,077 | 3 | 21,543 |
| | PHYSICAL SCIENCES | 20 | 18,925 | 2 | 17,378 | 66 | 18,376 | 30 | 17,632 |
| | ENGINEERING | 4 | 18,837 | 2 | 19,055 | 23 | 20,727 | 13 | 19,638 |
| | ALL OTHER FIELDS | 4 | 29,684 | 5 | 11,589 | 72 | 11,920 | 35 | 12,474 |
| COHORT 45-50 | TOTAL, ALL FIELDS | 62 | 15,657 | 21 | 12,452 | 479 | 14,568 | 142 | 14,596 |
| | BIO-SCIENCES, TOTAL | 20 | 13,980 | 1 | 11,749 | 95 | 12,532 | 26 | 15,213 |
| | BASIC MED. SCIENCES | 13 | 14,302 | | | 51 | 13,843 | 20 | 15,668 |
| | OTHER BIO-SCIENCES | 7 | 13,400 | 1 | 11,749 | 44 | 11,169 | 6 | 13,804 |
| | MEDICAL SCIENCES | 3 | 17,919 | | | 16 | 23,647 | 1 | 30,201 |
| | AGRIC. SCIENCES | 2 | 16,406 | | | 24 | 12,152 | 5 | 16,826 |
| | PSYCHOLOGY | 4 | 13,182 | 2 | 14,125 | 54 | 13,517 | 6 | 8,980 |
| | SOCIAL SCIENCES | 7 | 15,386 | 5 | 11,429 | 88 | 14,956 | 36 | 15,108 |
| | MATHEMATICS | 2 | 20,893 | 1 | 10,965 | 20 | 18,948 | 7 | 13,356 |
| | PHYSICAL SCIENCES | 20 | 16,904 | 1 | 14,455 | 65 | 16,455 | 28 | 18,668 |
| | ENGINEERING | 2 | 17,783 | 1 | 12,023 | 34 | 19,330 | 8 | 16,033 |
| | ALL OTHER FIELDS | 2 | 17,378 | 10 | 12,764 | 83 | 12,894 | 25 | 10,647 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 52 | 13,683 | 23 | 11,456 | 550 | 11,030 | 145 | 10,730 |
| | BIO-SCIENCES, TOTAL | 23 | 12,552 | 3 | 9,924 | 152 | 10,263 | 35 | 8,134 |
| | BASIC MED. SCIENCES | 18 | 12,638 | 2 | 9,333 | 92 | 10,538 | 23 | 8,261 |
| | OTHER BIO-SCIENCES | 5 | 12,247 | 1 | 11,220 | 60 | 9,852 | 12 | 7,899 |
| | MEDICAL SCIENCES | 2 | 13,489 | | | 20 | 14,555 | 8 | 15,668 |
| | AGRIC. SCIENCES | 4 | 13,259 | | | 27 | 10,779 | 7 | 11,482 |
| | PSYCHOLOGY | 2 | 13,645 | | | 66 | 11,993 | 7 | 12,924 |
| | SOCIAL SCIENCES | 4 | 11,955 | 11 | 10,536 | 100 | 11,041 | 25 | 12,190 |
| | MATHEMATICS | 1 | 19,055 | 2 | 12,303 | 25 | 13,957 | 5 | 12,023 |
| | PHYSICAL SCIENCES | 12 | 15,516 | 1 | 13,804 | 31 | 12,031 | 25 | 11,770 |
| | ENGINEERING | 3 | 18,481 | 1 | 15,849 | 22 | 16,270 | 8 | 16,885 |
| | ALL OTHER FIELDS | 1 | 12,882 | 5 | 13,182 | 107 | 9,439 | 25 | 8,856 |

a first general picture, Table 34 is offered to show the salaries by field, at the time of the first postdoctoral job and present job, combining all cohorts and functional categories. The fields are the 24 subfields, without summary into the grosser groupings.

TABLE 34

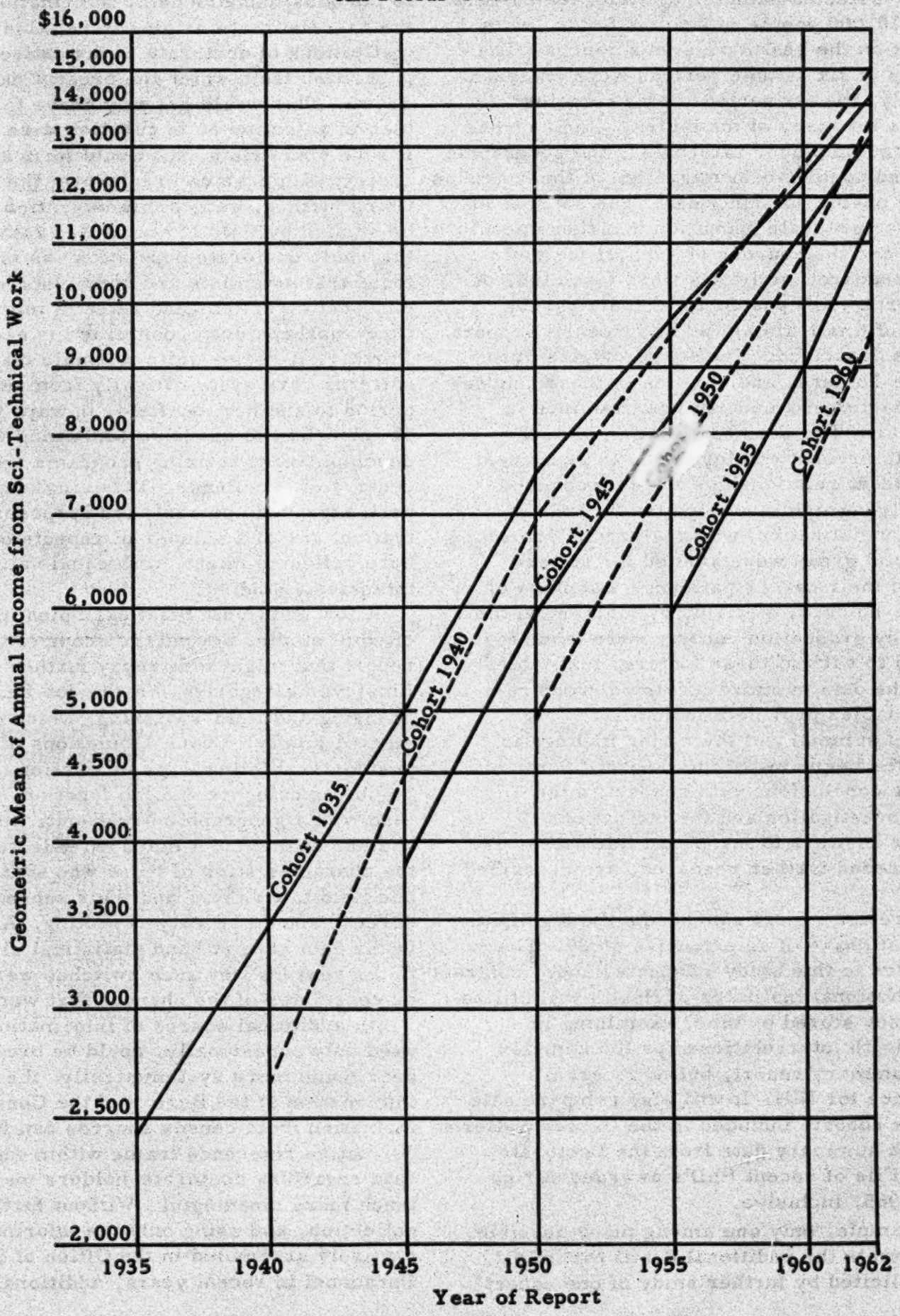
Geometric Mean of First Postdoctoral and Present Salaries by Field of Doctorate

| Field of Doctorate | First Post-Doctoral Salary | Present Salary | Field of Doctorate | First Post-Doctoral Salary | Present Salary |
|---|---|---|---|---|---|
| Physiology | $ 4375 | $ 12,050 | Economics | $ 4720 | $ 14,280 |
| Pharmacology | 4755 | 13,850 | Political Science | 4390 | 12,870 |
| Biochemistry | 4595 | 11,850 | History-Geography | 3845 | 10,680 |
| Microbiology | 4595 | 11,650 | Mathematics | 4325 | 14,170 |
| Botany | 4030 | 10,590 | Physics | 4410 | 15,860 |
| Genetics | 4470 | 10,880 | Chemistry | 4670 | 14,660 |
| Zoology | 3850 | 10,480 | Geology | 4265 | 12,890 |
| Miscellaneous | 5270 | 11,430 | Engineering | 4810 | 16,970 |
| Agricultural Sciences | 4370 | 12,180 | Languages and Literature | 3630 | 10,210 |
| Medical Sciences | 6015 | 14,860 | Arts and Humanities | 3745 | 10,510 |
| Psychology | 4300 | 13,200 | Professions | 4950 | 11,690 |
| Sociology | 4190 | 11,340 | Education | 5540 | 12,020 |

When all fields are combined, and the growth curves of salary are plotted for each cohort separately, an interesting phenomenon emerges, which is best seen in Figure 11. The ordinate of this chart is in logarithmic form; this permits a direct examination of growth rates. On semi-logarithmic paper, which this is in effect, a given percentage growth rate is shown by a straight line whose slope is proportional to the rate of growth. It can be seen in Figure 11 that the steepest growth rates are shown for the youngest cohorts. The growth from first job to the next five-year interval becomes progressively steeper with the successive five-year cohorts shown in Figure 11. The other phenomenon of interest here is that the 1935 and 1945 cohorts seem to be reaching a ceiling, and, in the latest periods, are being surpassed by the cohorts next following them. Although the differences here are small and might possibly be reversed in a more extended data series, it seems probable from the shape of the growth curves that some such overlapping process is actually being manifested here.

Figure 11

Geometric Means of Salaries, by Cohort
All Fields Combined



## Conclusions

This is the initial report of a long-term and intensive study of the career patterns of carefully-selected samples of doctorate-holders totaling 10,000 people in several fields, with emphasis on the health-related sciences. The graduates of six sample periods were analyzed separately, the six periods being combined into three for many of the tables. Studies were made of the employer categories, the geographic spread and postdoctoral migration of these groups and their on-the-job functions. The sources of support for graduate education that these people enjoyed, and the sources of support for their present research activities were tabulated. A minor portion had postdoctoral training; the duration of this training, and sources of support for it are described. The social origins of the doctorate-holders, and changes in these sources over a quarter of a century are examined in some detail. The possible relation of such sources to present employment was examined; no significant relationships were discovered. Mobility (geographic, occupational, and by field of specialization) was analyzed. Women as a special group were studied for factors related to their career patterns. Earnings of doctorate-holders, by field, by function on the job, and by graduation cohort, were tabulated. In regard to each of these factors, text tables present the data by more inclusive groupings; appendix tables provide fine detail.

A brief summary of the major findings is given at the beginning of this report. Some of the major conclusions with respect to the present investigation and the indications it offers for answers to manpower questions, as well as needed further research, are described below.

The present report represents the highlights of the first phase of an extensive study. The next phases of this study conducted under contract with the National Institutes of Health will utilize data already stored on tape, examining in greater depth interrelationships too complex for the summary report, but of program significance for NIH. It will also compare data on the six cohorts included in the Career Patterns Study with summary data from the Doctorate Records File of recent PhD's awarded during 1961 to 1965, inclusive.

An example, only one among many possible, will illustrate the additional detail that might well be elicited by further study of one aspect of the data: geographic migration. Such a further study might well involve, in addition to the questionnaire data, information regarding the baccalaureate origins in relation to the institutions of doctorate of the entire doctorate population from which the present cases were drawn. This would not only serve to indicate bias in selection or in questionnaire returns, if such bias exists, but would form a larger context within which to interpret the data. Going further, geographic migration might well be studied by field of doctorate, rather than for the whole doctorate population, as is might be found that scientists and humanists have quite different directions and rates of migratory flow--perhaps even counteracting each other. Further, it seems quite probable that migration patterns vary systematically from one time period to another, by field, in ways that would be important to agencies concerned with the development of training programs and new centers of excellence. This single example has been expanded upon only for purposes of illustration; any of a number of aspects of the data here collected might, with equal value, be intensively studied.

A few additional brief examples might be cited of studies beyond the scope of the present report that might well repay further effort: Employer categories, on-the-job functions, job-changing and field-switching, which could be studied jointly. Cross-tabulations of fields and postdoctoral fellowships in relation to later employer category and job function, perhaps also with a geographic break-out, would be another example. A more extended study of the characteristics of those who switch from one field to another, and their subsequent careers should be very revealing. Are there in the data here at hand statistical clues as to the reasons why such switches were made, or correlates of the changes that were made?

An additional source of information, here used only occasionally, could be brought to bear much more systematically: the accumulated information of the Bureau of the Census. Information from census sources can furnish a normative reference frame within which the data regarding doctorate-holders may become much more meaningful. Without further data collection, and using only the information routinely assembled in the Office of Scientific Personnel in recent years, additional information

of a "normative" type may be derived, regarding social origins and family background of those who have earned doctorates since 1960, the cut-off date for the current study. Another example of an existing data bank concerns the high school backgrounds of recent doctorate-holders, now being studied with the support of the National Science Foundation. In the questionnaire for the present study, information regarding high school of origin was collected. The two sources of information could be related in a highly functional manner, each contributing to the significance of data from the other source. For example, are the high schools that now produce many eventual doctorate-holders the same ones which, in an earlier generation were high producers? What changes have occurred over 30 years in this respect?

The above suggestions as to possible lines of valuable additional research point out a real problem: the very number of possible studies is so great as to require careful thought as to those most worthy of exploration in the next phase of research. The answer must lie in consideration both of data needs for administrative decisions and in the scientific value of the information itself, as a substantive field of knowledge that might be called the sociology of high-level scholarship.

# APPENDIXES:

## DESCRIPTIVE LIST OF APPENDIX ENTRIES

These appendixes contain a number of tables that amplify data shown in reduced form in tables in the text. They also contain, as the first entry, the questionnaire form used in this study. The tables of the appendixes are listed below, with descriptive information about each of them that was not feasible to include on the same page as the table. For each appendix table listed, there is also a reference to the portion of the text to which it refers.

Appendix 1. Reference: Introduction.
CAREER PATTERNS QUESTIONNAIRE
This is a two-page questionnaire used in the present study.

Appendix 2. Reference: Introduction, section on sample of doctorates included in the study.
QUESTIONNAIRE CONTACT ATTEMPTS: NUMBER OF PRESUMED LIVING PHD'S IN EACH FIELD AND COHORT
This table describes the samples of doctorate-holders to whom the questionnaire was sent, by year of doctorate graduation (cohort) and by field of degree. It excludes graduates who were known to have died, but includes the non-responders.

Appendix 3. Reference: Introduction, section on questionnaire procedure.
NUMBERS OF RETURNED QUESTIONNAIRES, BY FIELD AND COHORT
This table gives the number of doctorate-holders who actually returned useable questionnaires, and thus describes the total group under statistical analysis.

Appendix 4. Reference: Chapter 1, Table 4
CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT
This table provides the data regarding employers of those doctorate-holders who responded to the questionnaire, by field of doctorate and graduation cohort. The various employer categories, from left to right in the table, are as follows: United States colleges and universities; elementary and secondary schools in the United States; the United States government, in either civilian or military capacity; any foreign university; state and local governmental units in the United States; non-profit organizations of all types (typically hospitals); business and industry; self-employed, including consultants; all foreign employment other than universities; and all other categories, including unknown. The first page presents data on graduation cohorts 1935 and 1940; the second on graduation cohorts 1945 and 1950, and the last on graduation cohorts 1955 and 1960. This arrangement, with a fine field break-out within cohort, is typical of the appendix tables.

Appendix 5. Reference: Chapter 1, Table 7
GEOGRAPHIC REGION OF PRESENT JOB
This table gives information on the location of the doctorate-holders as of the end of 1962, sorted into the same graduation cohorts as in Appendix 4, on three pages. The regions are as follows: All non-U.S. addresses, followed by the nine census regions within the United States.
Geographic regions of the United States:
NEW ENGLAND: Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut
MIDDLE ATLANTIC: New York, New Jersey, Pennsylvania
EAST NORTH CENTRAL: Ohio, Indiana, Illiois, Michigan, Wisconsin
WEST NORTH CENTRAL: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
SOUTH ATLANTIC: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
EAST SOUTH CENTRAL: Kentucky, Tennessee, Alabama, Mississippi
WEST SOUTH CENTRAL: Arkansas, Louisiana, Oklahoma, Texas
MOUNTAIN: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana
PACIFIC AND INSULAR: Washington, Oregon, California, Alaska, Hawaii, Virgin Islands, Panama Canal Zone, Puerto Rico

Appendix 6. Reference: Chapter 2, Tables 9 and 10

6A: SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO RESEARCH ON PRESENT JOB

6B: SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

6C: SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO TEACHING ON PRESENT JOB

6D: SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

These tables include all graduation cohorts, but only two major fields of doctorate:

Basic medical sciences occupy the top portion of each table, other bio-sciences the bottom portion.

Appendix 7. Reference: Chapter 2, Table 12
NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

This table includes only those doctorate-holders who, at the time of follow-up, were spending half or more of their time on research. It has the usual three-page tabulation. On each page the first group of columns indicates those people who have some research support, or all their research support, from the Public Health Service. The second group of columns indicates people who are deriving no research support from the Public Health Service. Within each of these groups, a further break-out is provided according to whether or not research is supported by non-PHS sources, governmental or private, or both.

Appendix 8. Reference: Chapter 3, Table 13
SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENTAGES

In this three-page table, sources of support are given as follows: the student's university, the Veterans Administration; governmental sources other than V.A.; a private foundation or health agency; the student's spouse; the student's parents; the student's own earnings; his savings; his borrowings; and all other sources not included in the preceding categories.

Appendix 9. Reference: Chapter 3, Table 14
SOURCES OF SUPPORT FOR FIRST POST-DOCTORAL FELLOWSHIP

This three-page table gives the number of doctorate-holders in each field and cohort who held postdoctoral fellowships, and the sources of support for these fellowships, as follows:
the Public Health Service; the National Science Foundation; the Department of Defense; other U.S. government agencies; private foundations and health agencies; universities; all other sources not included in the preceding categories.

Appendix 10. Reference: Chapter 3
DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

The numbers of individuals holding fellowships, as shown in this three-page table, vary somewhat from those in Appendix 9 because in some cases the respondents indicated source but not duration, or vice versa; the discrepancies are small.

Appendix 11. Reference: Chapter 4, Table 16
EDUCATION OF FATHER

This three-page table indicates the highest level of formal education attained by the fathers of the doctorate-holders included in this study, as follows: no formal education; grades 1-3; grades 4-6; grades 7 and 8; grades 9-11; high school graduation; 1 to 3 years of college; college graduation; graduate education to MA, MD, or MS; PhD or equivalent.

Appendix 12. Reference: Chapter 4, Table 17
EDUCATION OF MOTHER. Parallel to Appendix 11, but refers to mothers of doctorate-holders.

Appendix 13. Reference: Chapter 4, Table 18
OCCUPATIONAL LEVEL OF FATHER

This three-page table indicates the occupations of the fathers of the doctorate-holders included in this study according to the following categories: college or university teacher; other professional worker; manager (any type); farmer; sales or service worker; skilled craftsman; semi-skilled machine operator; unskilled laborer.

Appendix 14 Reference: Chapter 4, Tables 19, 20, and 21

14A: RELATION OF EDUCATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

14B: RELATION OF EDUCATION OF MOTHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

14C: RELATION OF OCCUPATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

The top portion of each of these tables deals

with the basic medical sciences, the bottom portion with the other bio-sciences. Each table shows, in numbers and percentages, the employer categories, by grade level of father or mother, or occupation of father. Four employer categories only are used here: colleges and universities; the U.S. government; business and industry; and all others. The right-hand side of each table gives the details of the discrepancy between the actual values found and those that would be expected if there were no relationship between the variables involved. From this discrepancy, the $X^2$ statistic is calculated.

Appendix 15. Reference: Chapter 5, Table 26
FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB

This table is in four parts. The first includes all graduation cohorts combined; the next three parts include one decade cohort each. The rows in each table indicate the field of doctorate specialization; the columns relate to the field of the present job. The top portion of each table deals with the life sciences, psychology, and sociology; the bottom portion includes the other social sciences, the physical sciences, arts, professions, and education.

Appendix 16. Reference: Chapter 6, Table 27
EMPLOYERS OF WOMEN DOCTORATE-HOLDERS

Included in this table are data on all the women doctorate-holders in the sample, divided into three decade cohorts. Each cohort is sorted into 11 fields of doctorate. The employer categories used are the same as those used in Appendix 4.

Appendix 17. Reference: Chapter 7, Table 33
GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

This table provides data on the salaries of all the doctorate-holders in the sample who included this information on their questionnaires. There are six pages to this table, as the data are too voluminous for the usual three pages. Each cohort is presented on two facing pages, separated into two tables, each with eight data columns. The left-hand page contains numbers of cases and geometric means of salaries by the following functional categories:

Those doing teaching and research, with 50 per cent time devoted to each
Those doing research and administration, with 50 per cent time devoted to each
Those doing teaching and administration, with 50 per cent time devoted to each
Those doing research as a major function (50 per cent or more, with other functions either divided or totaling less than 50 per cent time)

The right-hand page has four other functional categories, each with numbers of cases and geometric means of salaries, as follows:

Teaching as a major function (50 per cent time or more; other functions less than 50 per cent)
Administration as a major function (50 per cent time or more; other functions less)
All other combinations or functions
Those for whom time-distribution data were not given

For a description of the meaning and rationale of the geometric mean, see Chapter 7.

# NATIONAL ACADEMY of SCIENCES CAREER PATTERNS STUDY

Please check the entries in Part I below for accuracy and completeness, make corrections and additions as needed, and proceed to Part II.

## Part I

Name_____ Place of birth_____ Year of birth_____ Code Number_____

Year of High School graduation_____ Field of specialization for Institution Granting Sex_____

Baccalaureate degree _____ Bachelor's degree_____ Bachelor's_____ Citizenship_____

Doctorate degree _____ Doctorate degree _____ Doctorate _____

Year in which all academic requirements other than dissertation were met_____ Name of your major adviser_____

If you held one or more postdoctoral fellowships, indicate when and where:

| Dates: From | To | Institution | Location | Source of Support |
|---|---|---|---|---|
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |

**Part II Employment Since Doctorate** Indicate your gainful employment at present, immediately following receipt of the doctorate degree, and as of December 31 of each of the indicated years (if they followed the doctorate). If you are NOT employed at the present time, please check here____ If you are seeking employment now, indicate by circling: Yes, seeking employment; full time___part-time. No, not seeking employment____ If you are not now employed, indicate your last previous employment on the top line below.

| Time Period of Employment | Fld. of specialization (see accompanying list of specialties) Name | No. | Title or Position | Name of Employer Address of Employer | If college or university, check all appropriate categories: Academic Rank: Instr. | Asst. Prof. | Assoc. Prof. | Full Prof | Admin.: Dept. Chm. | Dean | Status: Faculty | Non-faculty | Average Hours Worked Per Week | Approximate Percent of time spent in teaching, research, administration, other. (total to 100%) | Annual Professional Income (include all sources, such as consulting, royalties, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Present Job | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| First Post-doctoral job | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| Period Ending December 1960 | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| Period Ending December 1955 | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| Period Ending December 1950 | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| Period Ending December 1945 | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| Period Ending December 1940 | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |
| If your wife or husband is employed, please indicate his or her present employment data on the line below: | | | | | | | | | | | | | | | |
| Field or Occupation | | | | Name<br>Address | | | | | | | | | | Teaching_____%<br>Research_____%<br>Administration_____%<br>Other_____% | |

U.S. Dept. of Health Education and Welfare, Public Health Service: PHS T-195, 4-63

Bureau of the Budget No. 68-R384. Approval expires 12-31-63

Part III

1. **For your current positions only:** If you are engaged in research, please check source of research support: (check all that apply)

a. Public Health Service (NIH)___
b. National Science Foundation___
c. Department of Defense ___
d. National Aeronautics and Space Agency ___
e. Other Federal Agency, please specify_____ ___
f. State or local government ___
g. Company funds (your own employer) ___
h. Industry (other than own employer) ___
i. Private Foundation ___
j. Private Health or Social agency ___
k. University or other non-profit organization (not reported elsewhere) ___
l. Other, please specify _____ ___

2. **In each 5-year interval** reported in Part II, how many times did you change professional jobs? Enter zero if you held the same job for the entire 5-year period.

a. 1936-40 ___ c. 1946-50 ___ e. 1956-60 ___
b. 1941-45 ___ d. 1951-55 ___

3. **Support during graduate school.** Please indicate approximate % of support during graduate years, from each source shown. Enter % estimates to the nearest 10 %, so that categories a to h = 100%.

a. Fellowship, scholarship, assistantship, or traineeship
(1) University ___
(2) Federal gov't. agency ___
(3) Foundation or Health Agency ___
(4) Other, please specify _____ ___
b. Veteran's Benefits ___
c. Own Earnings ___
d. Spouse's Earnings ___
e. Parents' Contributions ___
f. Savings ___
g. Borrowings ___
h. Other, please specify _____ ___
Total 100%

4. **Honors** won in undergraduate years (as PBK, ΣXi, Cum Laude, etc.)

_____

Honors won in graduate years_____

_____

5. **Marital Status:** Single___; Married___; Year of first marriage____; Widowed, divorced, or separated___.

6. **Number of Children,** if any___. Years of birth: 19___; 19___; 19___; 19___; 19___; _____.

7. a. **High School** from which you graduated: a) Name_____

Address_____

b. Type of school (check one): Public___; Private, denominational___; Private, nondenominational___.

c. Size of graduating class (check one): 1-9___; 10-19___; 20-39___; 40-59___; 60-99___; 100-199___; 200-399___; 400-599___; 600-799___; 800 or more___.

8. Family Background:

a. Which category comes closest to describing your father's occupation? (check one)

(1)___College or University professor or researcher
(2)___Other professional occupation
(3)___Managerial
(4)___Farmer or farm manager
(5)___Sales or service
(6)___Clerical
(7)___Skilled craft
(8)___Semi-skilled
(9)___Unskilled

b. (1) Indicate years of birth of any brothers:

___ ___ ___ ___ ___ ___ ___ ___

(2) Indicate years of birth of any sisters:

___ ___ ___ ___ ___ ___ ___ ___

9. Indicate, by circling, the highest grade attained within each level of education for your father and mother.

a. Education up to baccalaureate:

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| father: | none | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 |
| | | Grammar school | | | | | | | | High school | | | | College | | | |
| mother: | none | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 |

b. Post-baccalaureate education:

| | Master's or First Professional (MA, MS, JD, MD, DDS, DVM, etc.) | Ph.D. or Equivalent | Postdoctoral |
|---|---|---|---|
| Father: | | | |
| Mother: | | | |

10. Please enter here your social security number:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | - | | - | | | | |

11. Please add any further comments that you feel bear on your career development after the receipt of the Ph.D.

Return this form to the Office of Scientific Personnel, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Appendix 2

## QUESTIONNAIRE CONTACT ATTEMPTS: NUMBER OF PRESUMED LIVING PHD'S IN EACH FIELD AND COHORT

| Field | Cohort Group | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 |
| TOTAL ALL FIELDS | 14831 | 2213 | 2492 | 2002 | 2383 | 2809 | 2932 |
| BIO-SCIENCES, TOTAL | 4481 | 538 | 840 | 470 | 597 | 929 | 1107 |
| Basic Med. Sciences | 2712 | 278 | 555 | 231 | 355 | 611 | 682 |
| Physiology | 785 | 127 | 169 | 56 | 74 | 170 | 189 |
| Pharmacology | 225 | 20 | 47 | 22 | 41 | 52 | 43 |
| Biochemistry | 980 | 63 | 217 | 98 | 123 | 208 | 271 |
| Microbiology | 722 | 68 | 122 | 55 | 117 | 181 | 179 |
| Other Bio-Sciences | 1769 | 260 | 285 | 239 | 242 | 318 | 425 |
| Botany | 627 | 93 | 105 | 98 | 105 | 116 | 110 |
| Genetics | 222 | 26 | 50 | 16 | 21 | 30 | 79 |
| Zoology | 719 | 97 | 129 | 123 | 115 | 128 | 127 |
| Misc. Biology | 201 | 44 | 1 | 2 | 1 | 44 | 109 |
| Medical Sciences | 385 | 60 | 53 | 35 | 52 | 102 | 83 |
| Agric. Sciences | 767 | 107 | 107 | 95 | 151 | 187 | 120 |
| Psychology | 662 | 104 | 113 | 115 | 124 | 110 | 96 |
| Social Sciences | 2667 | 431 | 427 | 428 | 417 | 469 | 495 |
| Sociology | 652 | 109 | 106 | 110 | 94 | 117 | 116 |
| Economics | 685 | 104 | 120 | 136 | 86 | 124 | 115 |
| Political Science | 615 | 101 | 97 | 63 | 118 | 108 | 128 |
| Hist. & Geog. | 715 | 117 | 104 | 119 | 119 | 120 | 136 |
| M-P-E FIELDS | 3221 | 517 | 523 | 454 | 599 | 574 | 554 |
| Mathematics | 641 | 100 | 88 | 88 | 102 | 133 | 130 |
| Physical Sciences | 1880 | 311 | 325 | 277 | 360 | 305 | 302 |
| Physics | 630 | 102 | 88 | 112 | 124 | 111 | 93 |
| Chemistry | 657 | 122 | 115 | 107 | 106 | 98 | 109 |
| Geo. Sciences | 593 | 87 | 122 | 58 | 130 | 96 | 100 |
| Engineering | 700 | 106 | 110 | 89 | 137 | 136 | 122 |
| ALL OTHER FIELDS | 2648 | 456 | 429 | 405 | 443 | 438 | 477 |
| Lang. & Lit. | 752 | 141 | 133 | 116 | 116 | 116 | 130 |
| Arts & Humanities | 636 | 113 | 118 | 78 | 118 | 104 | 105 |
| Professions | 616 | 103 | 94 | 92 | 101 | 100 | 126 |
| Education | 644 | 99 | 84 | 119 | 108 | 118 | 116 |

Appendix 3

## NUMBERS OF RETURNED QUESTIONNAIRES, BY FIELD AND COHORT

| Field | Total | Cohort Group 1935 | 1940 | 1945 | 1950 | 1955 | 1960 |
|---|---|---|---|---|---|---|---|
| TOTAL ALL FIELDS | 10016 | 1354 | 1610 | 1289 | 1627 | 1912 | 2224 |
| BIO-SCIENCES, TOTAL | 3165 | 351 | 570 | 328 | 418 | 663 | 835 |
| Basic Med. Sciences | 1887 | 180 | 378 | 156 | 246 | 425 | 502 |
| Physiology | 533 | 79 | 112 | 36 | 43 | 123 | 140 |
| Pharmacology | 153 | 15 | 25 | 18 | 29 | 36 | 30 |
| Biochemistry | 688 | 35 | 155 | 64 | 90 | 139 | 205 |
| Microbiology | 513 | 51 | 86 | 38 | 84 | 127 | 127 |
| Other Bio-Sciences | 1278 | 171 | 192 | 172 | 172 | 238 | 333 |
| Botany | 445 | 59 | 69 | 69 | 71 | 91 | 86 |
| Genetics | 155 | 19 | 32 | 13 | 14 | 21 | 56 |
| Zoology | 525 | 63 | 90 | 89 | 87 | 93 | 103 |
| Misc. Biology | 153 | 30 | 1 | 1 | 0 | 33 | 88 |
| Medical Sciences | 254 | 39 | 31 | 26 | 37 | 66 | 55 |
| Agric. Sciences | 536 | 77 | 74 | 65 | 103 | 125 | 92 |
| Psychology | 468 | 61 | 83 | 76 | 95 | 73 | 80 |
| Social Sciences | 1712 | 254 | 252 | 257 | 267 | 318 | 364 |
| Sociology | 449 | 78 | 65 | 64 | 61 | 84 | 97 |
| Economics | 436 | 56 | 80 | 80 | 54 | 84 | 82 |
| Political Science | 378 | 61 | 49 | 32 | 75 | 76 | 85 |
| Hist. & Geog. | 449 | 59 | 58 | 81 | 77 | 74 | 100 |
| M-P-E FIELDS | 2283 | 346 | 367 | 296 | 435 | 405 | 434 |
| Mathematics | 458 | 69 | 62 | 63 | 68 | 96 | 100 |
| Physical Sciences | 1362 | 206 | 238 | 185 | 271 | 222 | 240 |
| Physics | 436 | 71 | 69 | 67 | 90 | 70 | 69 |
| Chemistry | 493 | 76 | 92 | 78 | 77 | 80 | 90 |
| Geo. Sciences | 433 | 59 | 77 | 40 | 104 | 72 | 81 |
| Engineering | 463 | 71 | 67 | 48 | 96 | 87 | 94 |
| ALL OTHER FIELDS | 1598 | 226 | 233 | 241 | 272 | 262 | 364 |
| Lang. & Lit. | 457 | 77 | 76 | 67 | 74 | 67 | 96 |
| Arts & Humanities | 379 | 60 | 62 | 46 | 69 | 64 | 78 |
| Professions | 366 | 48 | 43 | 56 | 61 | 56 | 102 |
| Education | 396 | 41 | 52 | 72 | 68 | 75 | 88 |

## Appendix 4

## CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

| COHORT | FIELD | TOTAL GROUP | COLL & U | ELEM & HS | U.S. GOVT | FRGN UNIV | ST & LOC | NON-PRFT | BUS, IND | SELF EMPL | FRN, NON-U | OTHER & UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10016 | 5916 | 173 | 825 | 303 | 164 | 435 | 1506 | 218 | 254 | 222 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1354 | 777 | 32 | 123 | 23 | 32 | 71 | 199 | 45 | 24 | 28 |
| | BIO-SCIENCES, TOTAL | 351 | 198 | 8 | 38 | 5 | 12 | 25 | 38 | 11 | 9 | 7 |
| | BASIC MED. SCIENCES | 180 | 86 | 5 | 22 | 2 | 6 | 15 | 26 | 11 | 5 | 2 |
| | PHYSIOLOGY | 79 | 48 | 2 | 6 | 1 | 2 | 4 | 5 | 9 | 2 | |
| | PHARMACOLOGY | 15 | 7 | | 1 | 1 | | 2 | 3 | | 1 | |
| | BIOCHEMISTRY | 35 | 7 | 2 | 3 | | 2 | 6 | 13 | | 1 | 1 |
| | MICROBIOLOGY | 51 | 24 | 1 | 12 | | 2 | 3 | 5 | 2 | 1 | 1 |
| | OTHER BIO-SCIENCES | 171 | 112 | 3 | 16 | 3 | 6 | 10 | 12 | | 4 | 5 |
| | BOTANY | 59 | 34 | 1 | 11 | | 2 | 2 | 4 | | 2 | 3 |
| | GENETICS | 19 | 14 | 1 | 1 | | | 1 | 1 | | 1 | |
| | ZOOLOGY | 63 | 44 | 1 | 2 | 2 | 3 | 5 | 5 | | 1 | |
| | MISC. BIOLOGY | 30 | 20 | | 2 | 1 | 1 | 2 | 2 | | | 2 |
| | MEDICAL SCIENCES | 39 | 21 | 1 | 3 | 1 | 2 | 2 | 2 | 5 | 1 | 1 |
| | AGRIC. SCIENCES | 77 | 33 | 1 | 22 | 3 | 3 | 1 | 10 | | 3 | 1 |
| | PSYCHOLOGY | 61 | 31 | 5 | 2 | 3 | 3 | 5 | 4 | 6 | | 2 |
| | SOCIAL SCIENCES | 254 | 172 | 9 | 18 | 5 | 7 | 15 | 10 | 7 | 4 | 7 |
| | SOCIOLOGY | 78 | 54 | 1 | 3 | 2 | 2 | 8 | 2 | 2 | 1 | 3 |
| | ECONOMICS | 56 | 41 | | 3 | 2 | 1 | 1 | 5 | 1 | 1 | 1 |
| | POLITICAL SCIENCE | 61 | 36 | 3 | 9 | | 3 | 5 | 1 | 1 | 1 | 2 |
| | HIST., GEOGRAPHY | 59 | 41 | 5 | 3 | 1 | 1 | 1 | 2 | 3 | 1 | 1 |
| | M-P-E FIELDS | 346 | 158 | | 32 | 3 | 2 | 8 | 121 | 8 | 5 | 9 |
| | MATHEMATICS | 69 | 55 | | 6 | | | 1 | 5 | 1 | | 1 |
| | PHYSICAL SCIENCES | 206 | 78 | | 21 | 3 | 1 | 7 | 80 | 4 | 4 | 8 |
| | PHYSICS | 71 | 29 | | 8 | | | 1 | 24 | | 2 | 7 |
| | CHEMISTRY | 76 | 17 | | 5 | | | 5 | 47 | 1 | | 1 |
| | GEOLOGY | 59 | 32 | | 8 | 3 | 1 | 1 | 9 | 3 | 2 | |
| | ENGINEERING | 71 | 25 | | 5 | | 1 | | 36 | 3 | 1 | |
| | ALL OTHER FIELDS | 226 | 164 | 8 | 8 | 3 | 3 | 15 | 14 | 8 | 2 | 1 |
| | LANG. & LIT. | 77 | 62 | 3 | 3 | 2 | | 1 | 5 | 1 | | |
| | ARTS, HUMANITIES | 60 | 49 | 1 | 3 | 1 | 1 | 2 | 3 | | | |
| | PROFESSIONS | 48 | 27 | | | | | 8 | 5 | 6 | 2 | |
| | EDUCATION | 41 | 26 | 4 | 2 | | 2 | 4 | 1 | 1 | | 1 |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 877 | 32 | 141 | 26 | 24 | 77 | 293 | 70 | 40 | 30 |
| | BIO-SCIENCES, TOTAL | 570 | 299 | 9 | 61 | 11 | 10 | 33 | 100 | 24 | 11 | 12 |
| | BASIC MED. SCIENCES | 378 | 181 | 5 | 39 | 4 | 8 | 23 | 88 | 18 | 5 | 7 |
| | PHYSIOLOGY | 112 | 67 | 3 | 10 | | | 12 | 8 | 11 | | 1 |
| | PHARMACOLOGY | 25 | 9 | | 2 | 2 | | | 11 | 1 | | |
| | BIOCHEMISTRY | 155 | 60 | 1 | 14 | 1 | 5 | 8 | 53 | 4 | 4 | 5 |
| | MICROBIOLOGY | 86 | 45 | 1 | 13 | 1 | 3 | 3 | 16 | 2 | 1 | 1 |
| | OTHER BIO-SCIENCES | 192 | 118 | 4 | 22 | 7 | 2 | 10 | 12 | 6 | 6 | 5 |
| | BOTANY | 69 | 45 | 2 | 7 | 2 | | 5 | 4 | 1 | 2 | 1 |
| | GENETICS | 32 | 20 | | 3 | 2 | | 2 | 2 | 2 | | 1 |
| | ZOOLOGY | 90 | 52 | 2 | 12 | 3 | 2 | 3 | 6 | 3 | 4 | 3 |
| | MISC. BIOLOGY | 1 | 1 | | | | | | | | | |
| | MEDICAL SCIENCES | 31 | 9 | | 3 | | 2 | 2 | 1 | 10 | 1 | 3 |
| | AGRIC. SCIENCES | 74 | 39 | | 11 | 3 | 1 | 2 | 10 | 3 | 5 | |
| | PSYCHOLOGY | 83 | 30 | 5 | 11 | 3 | 3 | 8 | 16 | 6 | 1 | |
| | SOCIAL SCIENCES | 252 | 169 | 4 | 22 | 5 | 2 | 12 | 15 | 12 | 9 | 2 |
| | SOCIOLOGY | 65 | 44 | 1 | 3 | 2 | 2 | 7 | 2 | 3 | 1 | |
| | ECONOMICS | 80 | 49 | | 12 | 2 | | 1 | 8 | 4 | 2 | 2 |
| | POLITICAL SCIENCE | 49 | 31 | 1 | 4 | 1 | | 2 | 4 | 4 | 2 | |
| | HIST., GEOGRAPHY | 58 | 45 | 2 | 3 | | | 2 | 1 | 1 | 4 | |
| | M-P-E FIELDS | 367 | 156 | 2 | 25 | 4 | 3 | 6 | 140 | 11 | 10 | 10 |
| | MATHEMATICS | 62 | 43 | 1 | 1 | 1 | | | 14 | 2 | | |
| | PHYSICAL SCIENCES | 238 | 90 | 1 | 20 | 1 | 3 | 4 | 97 | 6 | 8 | 8 |
| | PHYSICS | 69 | 34 | | 9 | | | 1 | 18 | | 2 | 5 |
| | CHEMISTRY | 92 | 21 | | 4 | | | 3 | 60 | 1 | | 3 |
| | GEOLOGY | 77 | 35 | 1 | 7 | 1 | 3 | | 19 | 5 | 6 | |
| | ENGINEERING | 67 | 23 | | 4 | 2 | | 2 | 29 | 3 | 2 | 2 |
| | ALL OTHER FIELDS | 233 | 175 | 12 | 8 | | 3 | 14 | 11 | 4 | 3 | 3 |
| | LANG. & LIT. | 76 | 65 | 3 | 1 | | | 2 | 2 | | 2 | 1 |
| | ARTS, HUMANITIES | 62 | 48 | 1 | 1 | | 1 | 4 | 6 | | 1 | |
| | PROFESSIONS | 43 | 26 | | 3 | | 1 | 6 | 3 | 2 | | 2 |
| | EDUCATION | 52 | 36 | 8 | 3 | | 1 | 2 | | 2 | | |

Appendix 4, continued

## CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

| COHORT | FIELD | TOTAL GROUP | COLL & U | ELEM & HS | U.S. GOVT | FRGN UNIV | ST & LOC | NON-PRFT | BUS, IND | SELF EMPL | FRN, NON-U | OTHER & UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 838 | 17 | 88 | 23 | 19 | 51 | 170 | 37 | 25 | 21 |
| | BIO-SCIENCES, TOTAL | 328 | 209 | 2 | 28 | 9 | 6 | 14 | 41 | 10 | 4 | 5 |
| | BASIC MED. SCIENCES | 156 | 89 | | 15 | 3 | 3 | 8 | 28 | 7 | 1 | 2 |
| | PHYSIOLOGY | 36 | 25 | | 3 | | 1 | 1 | 3 | 2 | | 1 |
| | PHARMACOLOGY | 18 | 8 | | 1 | 1 | | 2 | 3 | 2 | 1 | |
| | BIOCHEMISTRY | 64 | 38 | | 7 | 1 | 1 | 3 | 12 | 1 | | 1 |
| | MICROBIOLOGY | 38 | 18 | | 4 | 1 | 1 | 2 | 10 | 2 | | |
| | OTHER BIO-SCIENCES | 172 | 120 | 2 | 13 | 6 | 3 | 6 | 13 | 3 | 3 | 3 |
| | BOTANY | 69 | 42 | 1 | 8 | 3 | 2 | 1 | 9 | 1 | 2 | |
| | GENETICS | 13 | 10 | | 1 | | | | | 1 | | 1 |
| | ZOOLOGY | 89 | 67 | 1 | 4 | 3 | 1 | 5 | 4 | 1 | 1 | 2 |
| | MISC. BIOLOGY | 1 | 1 | | | | | | | | | |
| | MEDICAL SCIENCES | 26 | 12 | | 4 | | 1 | 3 | 1 | 5 | | |
| | AGRIC. SCIENCES | 65 | 41 | | 5 | 2 | | | 9 | 3 | 3 | 2 |
| | PSYCHOLOGY | 76 | 50 | 2 | 6 | | 4 | 4 | 8 | 2 | | |
| | SOCIAL SCIENCES | 185 | 82 | 2 | 12 | 2 | | 3 | 68 | 6 | 5 | 5 |
| | SOCIOLOGY | 64 | 47 | | 6 | 1 | 1 | 6 | | 1 | 2 | |
| | ECONOMICS | 80 | 46 | | 10 | | | 3 | 11 | 2 | 4 | 4 |
| | POLITICAL SCIENCE | 32 | 23 | | 3 | 2 | | | 1 | 1 | 1 | 1 |
| | HIST., GEOGRAPHY | 81 | 70 | 1 | 2 | 1 | 2 | 3 | | 2 | | |
| | M-P-E FIELDS | 296 | 154 | 2 | 16 | 4 | | 3 | 95 | 7 | 7 | 8 |
| | MATHEMATICS | 63 | 51 | | 1 | 1 | | | 8 | | 1 | 1 |
| | PHYSICAL SCIENCES | 233 | 103 | 2 | 15 | 3 | | 3 | 87 | 7 | 6 | 7 |
| | PHYSICS | 67 | 36 | | 4 | 1 | | | 19 | 1 | 1 | 5 |
| | CHEMISTRY | 78 | 25 | 2 | 4 | | | 3 | 42 | 2 | | |
| | GEOLOGY | 40 | 21 | | 4 | 1 | | | 7 | 3 | 4 | |
| | ENGINEERING | 48 | 21 | | 3 | 1 | | | 19 | 1 | 1 | 2 |
| | ALL OTHER FIELDS | 241 | 186 | 10 | 8 | 4 | 5 | 15 | 4 | 4 | 4 | 1 |
| | LANG. & LIT. | 67 | 64 | | 1 | 1 | 1 | | | | | |
| | ARTS, HUMANITIES | 46 | 36 | 1 | 1 | 1 | 2 | 1 | | 2 | 1 | 1 |
| | PROFESSIONS | 56 | 36 | | 1 | 2 | 1 | 10 | 3 | 1 | 2 | |
| | EDUCATION | 72 | 50 | 9 | 5 | | 1 | 4 | 1 | 1 | 1 | |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 923 | 25 | 142 | 44 | 23 | 69 | 275 | 34 | 44 | 48 |
| | BIO-SCIENCES, TOTAL | 418 | 229 | 3 | 50 | 13 | 5 | 23 | 63 | 10 | 12 | 10 |
| | BASIC MED. SCIENCES | 246 | 125 | 1 | 26 | 4 | 2 | 15 | 51 | 9 | 6 | 7 |
| | PHYSIOLOGY | 43 | 26 | 1 | 5 | 1 | | 3 | 2 | 5 | | |
| | PHARMACOLOGY | 29 | 15 | | 1 | 1 | | | 10 | 1 | | 1 |
| | BIOCHEMISTRY | 90 | 40 | | 12 | 2 | | 7 | 21 | 1 | 5 | 2 |
| | MICROBIOLOGY | 84 | 44 | | 8 | | 2 | 5 | 18 | 2 | 1 | 4 |
| | OTHER BIO-SCIENCES | 172 | 104 | 2 | 24 | 9 | 3 | 8 | 12 | 1 | 6 | 3 |
| | BOTANY | 71 | 43 | | 10 | 4 | 2 | 4 | 5 | 1 | 2 | |
| | GENETICS | 14 | 4 | | 3 | 2 | | | 4 | | 1 | |
| | ZOOLOGY | 87 | 57 | 2 | 11 | 3 | 1 | 4 | 3 | | 3 | 3 |
| | MISC. BIOLOGY | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 13 | | 6 | 1 | 1 | 5 | 3 | 5 | 2 | 1 |
| | AGRIC. SCIENCES | 103 | 71 | | 10 | 3 | 2 | 1 | 12 | | 4 | |
| | PSYCHOLOGY | 95 | 42 | | 18 | | 1 | 8 | 14 | 9 | 1 | 2 |
| | SOCIAL SCIENCES | 267 | 196 | 2 | 17 | 5 | 5 | 11 | 12 | 6 | 10 | 3 |
| | SOCIOLOGY | 61 | 44 | | 2 | 2 | 2 | 3 | 4 | 2 | 2 | |
| | ECONOMICS | 54 | 37 | | 4 | 2 | 1 | 1 | 5 | 2 | 2 | |
| | POLITICAL SCIENCE | 75 | 53 | | 9 | | 2 | 3 | 1 | 1 | 4 | 2 |
| | HIST., GEOGRAPHY | 77 | 62 | 2 | 2 | 1 | | 4 | 2 | 1 | 2 | 1 |
| | M-P-E FIELDS | 435 | 179 | 1 | 30 | 13 | 3 | 7 | 159 | 2 | 10 | 31 |
| | MATHEMATICS | 68 | 46 | | 3 | 3 | | 1 | 13 | | | 2 |
| | PHYSICAL SCIENCES | 271 | 98 | 1 | 25 | 9 | 2 | 4 | 99 | 1 | 6 | 26 |
| | PHYSICS | 90 | 37 | | 8 | 2 | | 2 | 24 | | 1 | 16 |
| | CHEMISTRY | 77 | 15 | | 2 | | | 2 | 50 | | 1 | 7 |
| | GEOLOGY | 104 | 46 | 1 | 15 | 7 | 2 | | 25 | 1 | 4 | 3 |
| | ENGINEERING | 96 | 35 | | 2 | 1 | 1 | 2 | 47 | 1 | 4 | 3 |
| | ALL OTHER FIELDS | 272 | 193 | 19 | 11 | 9 | 6 | 14 | 12 | 2 | 5 | 1 |
| | LANG. & LIT. | 74 | 66 | 2 | 3 | 1 | | | 2 | | | |
| | ARTS, HUMANITIES | 69 | 59 | 3 | | 2 | | 2 | 1 | | 1 | 1 |
| | PROFESSIONS | 61 | 29 | | 6 | 4 | 1 | 12 | 8 | | 1 | |
| | EDUCATION | 68 | 39 | 14 | 2 | 2 | 5 | | 1 | 2 | 3 | |

Appendix 4, continued

## CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

| COHORT | FIELD | TOTAL GROUP | COLL & U | ELEM & HS | U.S. GOVT | FRGN UNIV | ST & LOC | NON-PRFT | BUS, IND | SELF EMPL | FRN, NON-U | OTHER & UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 1145 | 36 | 164 | 73 | 33 | 70 | 283 | 20 | 48 | 40 |
| | BIO-SCIENCES, TOTAL | 663 | 393 | 2 | 77 | 30 | 10 | 41 | 77 | 5 | 15 | 13 |
| | BASIC MED. SCIENCES | 425 | 240 | 2 | 49 | 17 | 9 | 27 | 60 | 3 | 9 | 9 |
| | PHYSIOLOGY | 123 | 83 | | 9 | 5 | 2 | 5 | 12 | 1 | | 6 |
| | PHARMACOLOGY | 36 | 23 | | 3 | 2 | | 2 | 5 | | | 1 |
| | BIOCHEMISTRY | 139 | 67 | 2 | 15 | 5 | 3 | 12 | 29 | | 5 | 1 |
| | MICROBIOLOGY | 127 | 67 | | 22 | 5 | 4 | 8 | 14 | 2 | 4 | 1 |
| | OTHER BIO-SCIENCES | 238 | 153 | | 28 | 13 | 1 | 14 | 17 | 2 | 6 | 4 |
| | BOTANY | 91 | 61 | | 11 | 5 | | 4 | 7 | | 2 | 1 |
| | GENETICS | 21 | 11 | | 4 | 3 | | | 1 | | 2 | |
| | ZOOLOGY | 93 | 65 | | 8 | 4 | | 5 | 6 | 2 | 2 | 1 |
| | MISC. BIOLOGY | 33 | 16 | | 5 | 1 | 1 | 5 | 3 | | | 2 |
| | MEDICAL SCIENCES | 66 | 33 | | 4 | 4 | 2 | 3 | 15 | 4 | 1 | |
| | AGRIC. SCIENCES | 125 | 81 | | 16 | 6 | 3 | 1 | 11 | 1 | 6 | |
| | PSYCHOLOGY | 73 | 32 | 4 | 12 | | 3 | 6 | 9 | 5 | 1 | 1 |
| | SOCIAL SCIENCES | 318 | 248 | 5 | 15 | 9 | 5 | 9 | 12 | 2 | 9 | 4 |
| | SOCIOLOGY | 84 | 66 | 1 | 4 | 1 | 2 | 4 | 1 | 1 | 3 | 1 |
| | ECONOMICS | 84 | 65 | | 4 | 1 | | 1 | 8 | | 3 | 2 |
| | POLITICAL SCIENCE | 76 | 58 | | 7 | 2 | 3 | 1 | 1 | 1 | 2 | 1 |
| | HIST., GEOGRAPHY | 74 | 59 | 4 | | 5 | | 3 | 2 | | 1 | |
| | M-P-E FIELDS | 405 | 162 | | 33 | 14 | 5 | 6 | 150 | 2 | 12 | 21 |
| | MATHEMATICS | 96 | 63 | | 3 | 5 | | 1 | 20 | | | 4 |
| | PHYSICAL SCIENCES | 222 | 71 | | 26 | 5 | 5 | 4 | 86 | 1 | 11 | 13 |
| | PHYSICS | 70 | 20 | | 8 | 2 | | 2 | 28 | | 2 | 8 |
| | CHEMISTRY | 80 | 26 | | 2 | | | 1 | 49 | | | 2 |
| | GEOLOGY | 72 | 25 | | 16 | 3 | 5 | 1 | 9 | 1 | 9 | 3 |
| | ENGINEERING | 87 | 28 | | 4 | 4 | | 1 | 44 | 1 | 1 | 4 |
| | ALL OTHER FIELDS | 262 | 196 | 25 | 7 | 10 | 5 | 4 | 9 | 1 | 4 | 1 |
| | LANG. & LIT. | 67 | 58 | 4 | 1 | 2 | | | 2 | | | |
| | ARTS, HUMANITIES | 64 | 57 | | 1 | 2 | 1 | 1 | 1 | 1 | | |
| | PROFESSIONS | 56 | 38 | 1 | 2 | 4 | 1 | 3 | 3 | | 3 | 1 |
| | EDUCATION | 75 | 43 | 20 | 3 | 2 | 3 | | 3 | | 1 | |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 1356 | 31 | 167 | 114 | 33 | 97 | 286 | 12 | 73 | 55 |
| | BIO-SCIENCES, TOTAL | 835 | 505 | | 74 | 52 | 11 | 52 | 81 | 4 | 36 | 20 |
| | BASIC MED. SCIENCES | 502 | 295 | | 41 | 30 | 5 | 40 | 65 | 2 | 15 | 9 |
| | PHYSIOLOGY | 140 | 96 | | 6 | 11 | | 5 | 12 | 1 | 4 | 5 |
| | PHARMACOLOGY | 30 | 14 | | 1 | 2 | | 3 | 9 | | 1 | |
| | BIOCHEMISTRY | 205 | 120 | | 17 | 8 | 1 | 19 | 33 | 1 | 3 | 3 |
| | MICROBIOLOGY | 127 | 65 | | 17 | 9 | 4 | 13 | 11 | | 7 | 1 |
| | OTHER BIO-SCIENCES | 333 | 210 | | 33 | 22 | 6 | 12 | 16 | 2 | 21 | 11 |
| | BOTANY | 86 | 54 | | 4 | 7 | 2 | 3 | 3 | | 12 | 1 |
| | GENETICS | 56 | 33 | | 4 | 3 | 2 | 2 | 5 | | 3 | 4 |
| | ZOOLOGY | 103 | 73 | | 13 | 7 | 1 | 4 | 3 | | 2 | |
| | MISC. BIOLOGY | 88 | 50 | | 12 | 5 | 1 | 3 | 5 | 2 | 4 | 6 |
| | MEDICAL SCIENCES | 55 | 16 | | 7 | 4 | 3 | 3 | 14 | 2 | 4 | 2 |
| | AGRIC. SCIENCES | 92 | 46 | | 15 | 8 | 4 | 1 | 11 | | 7 | |
| | PSYCHOLOGY | 80 | 38 | 3 | 11 | 3 | 6 | 7 | 5 | 5 | | 2 |
| | SOCIAL SCIENCES | 364 | 279 | 3 | 24 | 17 | 4 | 7 | 16 | | 11 | 3 |
| | SOCIOLOGY | 97 | 77 | | 6 | 5 | 2 | 3 | 2 | | 2 | |
| | ECONOMICS | 82 | 50 | | 7 | 4 | | 2 | 13 | | 6 | |
| | POLITICAL SCIENCE | 85 | 61 | | 10 | 4 | 2 | 2 | 1 | | 3 | 2 |
| | HIST., GEOGRAPHY | 100 | 91 | 3 | 1 | 4 | | | | | | 1 |
| | M-P-E FIELDS | 434 | 190 | | 32 | 19 | 3 | 6 | 150 | | 9 | 25 |
| | MATHEMATICS | 100 | 66 | | 7 | 5 | | | 18 | | 1 | 3 |
| | PHYSICAL SCIENCES | 240 | 89 | | 22 | 12 | 2 | 4 | 92 | | 7 | 12 |
| | PHYSICS | 69 | 34 | | 3 | 4 | | 2 | 22 | | | 4 |
| | CHEMISTRY | 90 | 27 | | 4 | | | 1 | 51 | | 2 | 5 |
| | GEOLOGY | 81 | 28 | | 15 | 8 | 2 | 1 | 19 | | 5 | 3 |
| | ENGINEERING | 94 | 35 | | 3 | 2 | 1 | 2 | 40 | | 1 | 10 |
| | ALL OTHER FIELDS | 364 | 282 | 25 | 4 | 11 | 2 | 21 | 9 | 1 | 6 | 3 |
| | LANG. & LIT. | 96 | 87 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | | |
| | ARTS, HUMANITIES | 78 | 63 | 2 | | 4 | | 4 | 2 | | 1 | 2 |
| | PROFESSIONS | 102 | 70 | 1 | 2 | 5 | 1 | 15 | 5 | | 3 | |
| | EDUCATION | 88 | 62 | 20 | 1 | 1 | | 1 | | | 2 | 1 |

## Appendix 5

## GEOGRAPHIC REGION OF PRESENT JOB

| COHORT | FIELD | TOTAL GROUP | FRGN | NEW ENG | MID. ATL. | E.N. CENT | W.N. CENT | SO. ATL | E.S. CENT | W.S. CENT | MTN | PAC | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10016 | 556 | 730 | 1968 | 1772 | 715 | 1529 | 320 | 560 | 421 | 1411 | 34 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1354 | 47 | 100 | 289 | 249 | 101 | 229 | 33 | 79 | 43 | 176 | 8 |
| | BIO-SCIENCES, TOTAL | 351 | 14 | 13 | 70 | 77 | 26 | 54 | 11 | 25 | 16 | 43 | 2 |
| | BASIC MED. SCIENCES | 180 | 7 | 3 | 36 | 47 | 11 | 30 | 5 | 13 | 7 | 21 | |
| | PHYSIOLOGY | 79 | 3 | 2 | 15 | 19 | 5 | 15 | 3 | 8 | 1 | 8 | |
| | PHARMACOLOGY | 15 | 2 | | 2 | 3 | 1 | 4 | | 1 | | 2 | |
| | BIOCHEMISTRY | 35 | 1 | | 10 | 12 | 3 | 3 | | 1 | 1 | 4 | |
| | MICROBIOLOGY | 51 | 1 | 1 | 9 | 13 | 2 | 8 | 2 | 3 | 5 | 7 | |
| | OTHER BIO-SCIENCES | 171 | 7 | 10 | 34 | 30 | 15 | 24 | 6 | 12 | 9 | 22 | 2 |
| | BOTANY | 59 | 2 | 5 | 10 | 9 | 4 | 12 | 1 | 4 | 4 | 7 | 1 |
| | GENETICS | 19 | 1 | 1 | 3 | 4 | 3 | 1 | | 2 | 1 | 3 | |
| | ZOOLOGY | 63 | 3 | 3 | 14 | 12 | 5 | 4 | 4 | 5 | 3 | 10 | |
| | MISC. BIOLOGY | 30 | 1 | 1 | 7 | 5 | 3 | 7 | 1 | 1 | 1 | 2 | 1 |
| | MEDICAL SCIENCES | 39 | 2 | 1 | 8 | 6 | 4 | 8 | 2 | | 1 | 7 | |
| | AGRIC. SCIENCES | 77 | 6 | 5 | 10 | 10 | 7 | 18 | 4 | 4 | 3 | 10 | |
| | PSYCHOLOGY | 61 | 3 | 6 | 12 | 16 | 9 | 7 | 1 | 2 | | 5 | |
| | SOCIAL SCIENCES | 254 | 9 | 27 | 55 | 44 | 19 | 52 | 1 | 8 | 6 | 29 | 4 |
| | SOCIOLOGY | 78 | 3 | 9 | 19 | 13 | 8 | 8 | 1 | 2 | 2 | 10 | 3 |
| | ECONOMICS | 56 | 3 | 10 | 11 | 9 | 3 | 14 | | 1 | 1 | 4 | |
| | POLITICAL SCIENCE | 61 | 1 | 2 | 12 | 13 | 3 | 17 | | 4 | 1 | 8 | |
| | HIST., GEOGRAPHY | 59 | 2 | 6 | 13 | 9 | 5 | 13 | | 1 | 2 | 7 | 1 |
| | M-P-E FIELDS | 346 | 8 | 26 | 84 | 48 | 23 | 54 | 7 | 25 | 11 | 59 | 1 |
| | MATHEMATICS | 69 | | 3 | 8 | 9 | 4 | 15 | 4 | 6 | 1 | 19 | |
| | PHYSICAL SCIENCES | 206 | 7 | 15 | 54 | 29 | 15 | 27 | | 17 | 9 | 32 | 1 |
| | PHYSICS | 71 | 2 | 6 | 23 | 10 | 5 | 8 | | 3 | 2 | 12 | |
| | CHEMISTRY | 76 | | 4 | 27 | 14 | 4 | 14 | | 6 | 1 | 5 | 1 |
| | GEOLOGY | 59 | 5 | 5 | 4 | 5 | 6 | 5 | | 8 | 6 | 15 | |
| | ENGINEERING | 71 | 1 | 8 | 22 | 10 | 4 | 12 | 3 | 2 | 1 | 8 | |
| | ALL OTHER FIELDS | 226 | 5 | 22 | 50 | 48 | 13 | 36 | 7 | 15 | 6 | 23 | 1 |
| | LANG. & LIT. | 77 | 2 | 8 | 16 | 13 | 5 | 12 | 4 | 7 | 3 | 7 | |
| | ARTS, HUMANITIES | 60 | 1 | 8 | 11 | 18 | 2 | 10 | 1 | 2 | 1 | 6 | |
| | PROFESSIONS | 48 | 2 | 4 | 15 | 6 | 5 | 4 | 2 | 3 | 1 | 6 | |
| | EDUCATION | 41 | | 2 | 8 | 11 | 1 | 10 | | 3 | 1 | 4 | 1 |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 66 | 121 | 329 | 295 | 115 | 258 | 47 | 94 | 61 | 215 | 9 |
| | BIO-SCIENCES, TOTAL | 570 | 22 | 33 | 112 | 108 | 43 | 98 | 20 | 27 | 25 | 77 | 5 |
| | BASIC MED. SCIENCES | 378 | 9 | 19 | 81 | 78 | 32 | 60 | 11 | 17 | 14 | 55 | 2 |
| | PHYSIOLOGY | 112 | | 7 | 24 | 21 | 9 | 19 | 5 | 4 | 5 | 18 | |
| | PHARMACOLOGY | 25 | 2 | | 3 | 7 | 2 | 6 | | 2 | | 3 | |
| | BIOCHEMISTRY | 155 | 5 | 9 | 35 | 32 | 13 | 25 | 4 | 4 | 5 | 21 | 2 |
| | MICROBIOLOGY | 86 | 2 | 3 | 19 | 18 | 8 | 10 | 2 | 7 | 4 | 13 | |
| | OTHER BIO-SCIENCES | 192 | 13 | 14 | 31 | 30 | 11 | 38 | 9 | 10 | 11 | 22 | 3 |
| | BOTANY | 69 | 4 | 8 | 9 | 12 | 3 | 12 | | 6 | 4 | 10 | 1 |
| | GENETICS | 32 | 2 | 4 | 4 | 6 | 3 | 4 | 3 | | 1 | 5 | |
| | ZOOLOGY | 90 | 7 | 2 | 18 | 11 | 5 | 22 | 6 | 4 | 6 | 7 | 2 |
| | MISC. BIOLOGY | 1 | | | | 1 | | | | | | | |
| | MEDICAL SCIENCES | 31 | 1 | 2 | 7 | 4 | 3 | 5 | 1 | | | 6 | 2 |
| | AGRIC. SCIENCES | 74 | 8 | 2 | 8 | 13 | 4 | 15 | 7 | 3 | 4 | 10 | |
| | PSYCHOLOGY | 83 | 4 | 4 | 17 | 15 | 6 | 15 | 2 | 5 | 4 | 11 | |
| | SOCIAL SCIENCES | 252 | 14 | 22 | 46 | 42 | 25 | 44 | 8 | 19 | 9 | 22 | 1 |
| | SOCIOLOGY | 65 | 3 | 3 | 15 | 11 | 7 | 6 | 1 | 7 | 4 | 8 | |
| | ECONOMICS | 80 | 4 | 8 | 16 | 12 | 9 | 17 | 3 | 3 | 4 | 3 | 1 |
| | POLITICAL SCIENCE | 49 | 3 | 7 | 9 | 6 | | 14 | 2 | 5 | | 3 | |
| | HIST., GEOGRAPHY | 58 | 4 | 4 | 6 | 13 | 9 | 7 | 2 | 4 | 1 | 8 | |
| | M-P-E FIELDS | 367 | 14 | 36 | 77 | 61 | 17 | 54 | 6 | 25 | 12 | 65 | |
| | MATHEMATICS | 62 | 1 | 10 | 8 | 14 | 3 | 6 | | 3 | | 17 | |
| | PHYSICAL SCIENCES | 238 | 9 | 16 | 53 | 37 | 9 | 36 | 5 | 21 | 11 | 41 | |
| | PHYSICS | 69 | 2 | 4 | 12 | 12 | 2 | 12 | 2 | 1 | 2 | 20 | |
| | CHEMISTRY | 92 | | 5 | 33 | 16 | 6 | 15 | 3 | 3 | 1 | 10 | |
| | GEOLOGY | 77 | 7 | 7 | 8 | 9 | 1 | 9 | | 17 | 8 | 11 | |
| | ENGINEERING | 67 | 4 | 10 | 16 | 10 | 5 | 12 | 1 | 1 | 1 | 7 | |
| | ALL OTHER FIELDS | 233 | 3 | 22 | 62 | 52 | 17 | 27 | 3 | 15 | 7 | 24 | 1 |
| | LANG. & LIT. | 76 | 2 | 6 | 19 | 22 | 4 | 8 | 1 | 8 | 2 | 4 | |
| | ARTS, HUMANITIES | 62 | 1 | 7 | 22 | 15 | 3 | 5 | | 3 | 2 | 4 | |
| | PROFESSIONS | 43 | | 6 | 10 | 4 | 4 | 9 | 2 | | 1 | 6 | 1 |
| | EDUCATION | 52 | | 3 | 11 | 11 | 6 | 5 | | 4 | 2 | 10 | |

Appendix 5, continued

## GEOGRAPHIC REGION OF PRESENT JOB

| COHORT | FIELD | TOTAL GROUP | FRGN | NEW ENG | MID. ATL. | E.N. CENT | W.N. CENT | SO. ATL | E.S. CENT | W.S. CENT | MTN | PAC | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 48 | 97 | 277 | 232 | 99 | 202 | 44 | 57 | 42 | 190 | 1 |
| | BIO-SCIENCES, TOTAL | 328 | 13 | 14 | 68 | 57 | 25 | 50 | 17 | 15 | 10 | 59 | |
| | BASIC MED. SCIENCES | 156 | 4 | 5 | 44 | 32 | 10 | 17 | 7 | 7 | 5 | 25 | |
| | PHYSIOLOGY | 36 | | 2 | 7 | 7 | 4 | 4 | 3 | 2 | | 7 | |
| | PHARMACOLOGY | 18 | 2 | | 6 | 3 | 1 | 2 | | 1 | 1 | 2 | |
| | BIOCHEMISTRY | 64 | 1 | 2 | 17 | 11 | 4 | 8 | 3 | 4 | 2 | 12 | |
| | MICROBIOLOGY | 38 | 1 | 1 | 14 | 11 | 1 | 3 | 1 | | 2 | 4 | |
| | OTHER BIO-SCIENCES | 172 | 9 | 9 | 24 | 25 | 15 | 33 | 10 | 8 | 5 | 34 | |
| | BOTANY | 69 | 5 | 4 | 11 | 7 | 6 | 15 | 2 | 1 | 4 | 14 | |
| | GENETICS | 13 | | | 2 | 1 | 2 | 3 | 1 | 3 | | 1 | |
| | ZOOLOGY | 89 | 4 | 5 | 11 | 17 | 7 | 15 | 6 | 4 | 1 | 19 | |
| | MISC. BIOLOGY | 1 | | | | | | | 1 | | | | |
| | MEDICAL SCIENCES | 26 | | 1 | 9 | 5 | 2 | 5 | | 1 | 1 | 2 | |
| | AGRIC. SCIENCES | 65 | 5 | 4 | 14 | 9 | 7 | 10 | 1 | 3 | 4 | 8 | |
| | PSYCHOLOGY | 76 | | 9 | 17 | 16 | 7 | 14 | 1 | 2 | 2 | 8 | |
| | SOCIAL SCIENCES | 257 | 11 | 20 | 51 | 49 | 16 | 53 | 9 | 12 | 7 | 28 | 1 |
| | SOCIOLOGY | 64 | 3 | 3 | 14 | 17 | 4 | 12 | 1 | 3 | 4 | 3 | |
| | ECONOMICS | 80 | 4 | 8 | 11 | 10 | 7 | 24 | 6 | 2 | 1 | 6 | 1 |
| | POLITICAL SCIENCE | 32 | 3 | 1 | 10 | 3 | 2 | 7 | 1 | 1 | | 4 | |
| | HIST., GEOGRAPHY | 81 | 1 | 8 | 16 | 19 | 3 | 10 | 1 | 6 | 2 | 15 | |
| | M-P-E FIELDS | 296 | 11 | 35 | 62 | 48 | 17 | 41 | 6 | 11 | 15 | 50 | |
| | MATHEMATICS | 63 | 2 | 8 | 13 | 14 | 3 | 5 | 1 | 3 | 1 | 13 | |
| | PHYSICAL SCIENCES | 185 | 7 | 20 | 35 | 27 | 10 | 31 | 5 | 7 | 11 | 32 | |
| | PHYSICS | 67 | 2 | 10 | 12 | 13 | 5 | 7 | 2 | 1 | 5 | 10 | |
| | CHEMISTRY | 78 | | 4 | 16 | 11 | 3 | 20 | 3 | 3 | 1 | 17 | |
| | GEOLOGY | 40 | 5 | 6 | 7 | 3 | 2 | 4 | | 3 | 5 | 5 | |
| | ENGINEERING | 48 | 2 | 7 | 14 | 7 | 4 | 5 | | 1 | 3 | 5 | |
| | ALL OTHER FIELDS | 241 | 8 | 14 | 56 | 48 | 25 | 29 | 10 | 13 | 3 | 35 | |
| | LANG. & LIT. | 67 | 1 | 3 | 15 | 14 | 10 | 9 | 3 | 5 | 1 | 6 | |
| | ARTS, HUMANITIES | 46 | 2 | 4 | 13 | 10 | 3 | 4 | 1 | 1 | 2 | 6 | |
| | PROFESSIONS | 56 | 4 | 4 | 11 | 10 | 5 | 5 | 3 | 3 | | 11 | |
| | EDUCATION | 72 | 1 | 3 | 17 | 14 | 7 | 11 | 3 | 4 | | 12 | |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 88 | 116 | 277 | 295 | 112 | 253 | 51 | 81 | 79 | 270 | 5 |
| | BIO-SCIENCES, TOTAL | 418 | 25 | 26 | 78 | 84 | 24 | 66 | 13 | 12 | 13 | 75 | 2 |
| | BASIC MED. SCIENCES | 246 | 10 | 11 | 54 | 56 | 16 | 35 | 6 | 8 | 4 | 45 | 1 |
| | PHYSIOLOGY | 43 | 1 | 4 | 10 | 9 | 2 | 6 | | 1 | 1 | 9 | |
| | PHARMACOLOGY | 29 | 1 | 1 | 5 | 12 | 1 | 5 | | | 1 | 2 | 1 |
| | BIOCHEMISTRY | 90 | 7 | 3 | 21 | 20 | 5 | 8 | 3 | 4 | | 19 | |
| | MICROBIOLOGY | 84 | 1 | 3 | 18 | 15 | 8 | 16 | 3 | 3 | 2 | 15 | |
| | OTHER BIO-SCIENCES | 172 | 15 | 15 | 24 | 28 | 8 | 31 | 7 | 4 | 9 | 30 | 1 |
| | BOTANY | 71 | 6 | 5 | 10 | 11 | 4 | 11 | 4 | 2 | 2 | 16 | |
| | GENETICS | 14 | 3 | 1 | 1 | | 1 | 2 | 1 | | 1 | 4 | |
| | ZOOLOGY | 87 | 6 | 9 | 13 | 17 | 3 | 18 | 2 | 2 | 6 | 10 | 1 |
| | MISC. BIOLOGY | | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 3 | 3 | 10 | 4 | 5 | 4 | 3 | 1 | | 3 | 1 |
| | AGRIC. SCIENCES | 103 | 7 | 4 | 6 | 20 | 8 | 18 | 5 | 11 | 6 | 18 | |
| | PSYCHOLOGY | 95 | 1 | 8 | 9 | 21 | 10 | 12 | 5 | 6 | 4 | 19 | |
| | SOCIAL SCIENCES | 267 | 15 | 20 | 35 | 48 | 23 | 53 | 11 | 13 | 12 | 37 | |
| | SOCIOLOGY | 61 | 4 | 7 | 8 | 8 | 4 | 10 | 3 | 3 | 4 | 10 | |
| | ECONOMICS | 54 | 4 | 4 | 4 | 12 | 4 | 13 | | 3 | 3 | 7 | |
| | POLITICAL SCIENCE | 75 | 4 | 5 | 12 | 12 | 5 | 20 | 3 | 4 | 2 | 8 | |
| | HIST., GEOGRAPHY | 77 | 3 | 4 | 11 | 16 | 10 | 10 | 5 | 3 | 3 | 12 | |
| | M-P-E FIELDS | 435 | 23 | 34 | 81 | 68 | 28 | 58 | 8 | 26 | 34 | 75 | |
| | MATHEMATICS | 68 | 3 | 6 | 12 | 14 | 11 | 6 | | 1 | 3 | 12 | |
| | PHYSICAL SCIENCES | 271 | 15 | 20 | 46 | 37 | 12 | 44 | 7 | 19 | 27 | 44 | |
| | PHYSICS | 90 | 3 | 8 | 13 | 11 | 4 | 17 | 4 | 4 | 11 | 15 | |
| | CHEMISTRY | 77 | 1 | 5 | 24 | 15 | 2 | 13 | 3 | 2 | 5 | 7 | |
| | GEOLOGY | 104 | 11 | 7 | 9 | 11 | 6 | 14 | | 13 | 11 | 22 | |
| | ENGINEERING | 96 | 5 | 8 | 23 | 17 | 5 | 8 | 1 | 6 | 4 | 19 | |
| | ALL OTHER FIELDS | 272 | 14 | 21 | 58 | 50 | 14 | 42 | 6 | 12 | 10 | 43 | 2 |
| | LANG. & LIT. | 74 | 1 | 8 | 15 | 20 | 5 | 11 | 1 | 2 | 2 | 9 | |
| | ARTS, HUMANITIES | 69 | 3 | 9 | 14 | 12 | 2 | 14 | 1 | 4 | 2 | 7 | 1 |
| | PROFESSIONS | 61 | 5 | 4 | 12 | 9 | 4 | 13 | 1 | | 2 | 10 | 1 |
| | EDUCATION | 68 | 5 | | 17 | 9 | 3 | 4 | 3 | 6 | 4 | 17 | |

Appendix 5, continued

## GEOGRAPHIC REGION OF PRESENT JOB

| COHORT | FIELD | TOTAL GROUP | FRGN | NEW ENG | MID. ATL | E.N. CENT | W.N. CENT | SO. ATL | E.S. CENT | W.S. CENT | MTN | PAC | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 120 | 134 | 362 | 320 | 124 | 293 | 74 | 125 | 96 | 261 | 3 |
| | BIO-SCIENCES, TOTAL | 663 | 45 | 37 | 118 | 121 | 49 | 113 | 25 | 39 | 33 | 82 | 1 |
| | BASIC MED. SCIENCES | 425 | 26 | 29 | 79 | 88 | 32 | 64 | 18 | 24 | 21 | 43 | 1 |
| | PHYSIOLOGY | 123 | 5 | 9 | 28 | 17 | 10 | 16 | 6 | 10 | 6 | 16 | |
| | PHARMACOLOGY | 36 | 2 | 2 | 7 | 6 | 4 | 4 | 3 | 4 | 1 | 3 | |
| | BIOCHEMISTRY | 139 | 10 | 13 | 28 | 35 | 11 | 16 | 4 | 3 | 6 | 12 | 1 |
| | MICROBIOLOGY | 127 | 9 | 5 | 16 | 30 | 7 | 28 | 5 | 7 | 8 | 12 | |
| | OTHER BIO-SCIENCES | 238 | 19 | 8 | 39 | 33 | 17 | 49 | 7 | 15 | 12 | 39 | |
| | BOTANY | 91 | 7 | 2 | 14 | 13 | 5 | 19 | 6 | 5 | 7 | 13 | |
| | GENETICS | 21 | 5 | | 1 | 2 | 2 | 4 | | 1 | 2 | 4 | |
| | ZOOLOGY | 93 | 6 | 4 | 20 | 15 | 9 | 20 | | 8 | 2 | 9 | |
| | MISC. BIOLOGY | 33 | 1 | 2 | 4 | 3 | 1 | 6 | 1 | 1 | 1 | 13 | |
| | MEDICAL SCIENCES | 66 | 5 | 4 | 19 | 7 | 3 | 10 | 3 | 8 | 3 | 4 | |
| | AGRIC. SCIENCES | 125 | 12 | 2 | 12 | 17 | 11 | 26 | 5 | 14 | 10 | 16 | |
| | PSYCHOLOGY | 73 | 1 | 8 | 17 | 10 | 7 | 8 | 3 | 4 | 2 | 13 | |
| | SOCIAL SCIENCES | 318 | 17 | 26 | 59 | 61 | 19 | 49 | 17 | 24 | 8 | 37 | 1 |
| | SOCIOLOGY | 84 | 4 | 6 | 14 | 18 | 8 | 11 | 3 | 7 | 3 | 9 | 1 |
| | ECONOMICS | 84 | 3 | 6 | 12 | 12 | 6 | 15 | 6 | 10 | 2 | 12 | |
| | POLITICAL SCIENCE | 76 | 4 | 8 | 19 | 13 | 3 | 13 | 3 | 5 | 1 | 7 | |
| | HIST., GEOGRAPHY | 74 | 6 | 6 | 14 | 18 | 2 | 10 | 5 | 2 | 2 | 9 | |
| | M-P-E FIELDS | 405 | 26 | 37 | 83 | 53 | 19 | 56 | 14 | 20 | 27 | 70 | |
| | MATHEMATICS | 96 | 5 | 8 | 21 | 9 | 5 | 14 | 2 | 3 | 9 | 20 | |
| | PHYSICAL SCIENCES | 222 | 16 | 20 | 44 | 33 | 11 | 33 | 8 | 11 | 13 | 33 | |
| | PHYSICS | 70 | 4 | 8 | 14 | 10 | 2 | 11 | 1 | 3 | 4 | 13 | |
| | CHEMISTRY | 80 | | 8 | 23 | 15 | 5 | 9 | 5 | 3 | 1 | 11 | |
| | GEOLOGY | 72 | 12 | 4 | 7 | 8 | 4 | 13 | 2 | 5 | 8 | 9 | |
| | ENGINEERING | 87 | 5 | 9 | 18 | 11 | 3 | 9 | 4 | 6 | 5 | 17 | |
| | ALL OTHER FIELDS | 262 | 14 | 20 | 54 | 51 | 16 | 31 | 7 | 16 | 13 | 39 | 1 |
| | LANG. & LIT. | 67 | 2 | 2 | 11 | 15 | 7 | 9 | 2 | 5 | 5 | 9 | |
| | ARTS, HUMANITIES | 64 | 2 | 9 | 12 | 12 | 2 | 8 | 1 | 4 | 1 | 13 | |
| | PROFESSIONS | 56 | 7 | 7 | 14 | 8 | 1 | 6 | | 3 | 4 | 5 | 1 |
| | EDUCATION | 75 | 3 | 2 | 17 | 16 | 6 | 8 | 4 | 4 | 3 | 12 | |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 187 | 162 | 434 | 381 | 164 | 294 | 71 | 124 | 100 | 299 | 8 |
| | BIO-SCIENCES, TOTAL | 835 | 88 | 57 | 159 | 132 | 57 | 115 | 31 | 58 | 23 | 113 | 2 |
| | BASIC MED. SCIENCES | 502 | 45 | 33 | 112 | 82 | 34 | 70 | 12 | 33 | 12 | 68 | 1 |
| | PHYSIOLOGY | 140 | 15 | 5 | 25 | 18 | 13 | 16 | 5 | 13 | 5 | 24 | 1 |
| | PHARMACOLOGY | 30 | 3 | | 9 | 10 | | 2 | 1 | | 1 | 4 | |
| | BIOCHEMISTRY | 205 | 11 | 17 | 48 | 34 | 12 | 33 | 4 | 15 | 5 | 26 | |
| | MICROBIOLOGY | 127 | 16 | 11 | 30 | 20 | 9 | 19 | 2 | 5 | 1 | 14 | |
| | OTHER BIO-SCIENCES | 333 | 43 | 24 | 47 | 50 | 23 | 45 | 19 | 25 | 11 | 45 | 1 |
| | BOTANY | 86 | 19 | 8 | 7 | 14 | 10 | 8 | 9 | 4 | 4 | 3 | |
| | GENETICS | 56 | 6 | 1 | 6 | 9 | 3 | 7 | 4 | 3 | 1 | 16 | |
| | ZOOLOGY | 103 | 9 | 7 | 19 | 14 | 6 | 12 | 4 | 12 | 5 | 15 | |
| | MISC. BIOLOGY | 88 | 9 | 8 | 15 | 13 | 4 | 18 | 2 | 6 | 1 | 11 | 1 |
| | MEDICAL SCIENCES | 55 | 8 | 2 | 8 | 17 | 5 | 7 | | 2 | 1 | 5 | |
| | AGRIC. SCIENCES | 92 | 15 | 4 | 9 | 14 | 10 | 10 | 6 | 4 | 7 | 13 | |
| | PSYCHOLOGY | 80 | 3 | 9 | 16 | 9 | 6 | 9 | 2 | 7 | 7 | 12 | |
| | SOCIAL SCIENCES | 364 | 28 | 26 | 67 | 62 | 30 | 68 | 12 | 10 | 17 | 42 | 2 |
| | SOCIOLOGY | 97 | 7 | 12 | 21 | 17 | 4 | 14 | 3 | 1 | 6 | 12 | |
| | ECONOMICS | 82 | 10 | 4 | 12 | 11 | 5 | 20 | 5 | 2 | 6 | 7 | |
| | POLITICAL SCIENCE | 85 | 7 | 4 | 10 | 19 | 11 | 20 | 1 | 2 | 2 | 8 | 1 |
| | HIST., GEOGRAPHY | 100 | 4 | 6 | 24 | 15 | 10 | 14 | 3 | 5 | 3 | 15 | 1 |
| | M-P-E FIELDS | 434 | 28 | 35 | 100 | 69 | 20 | 54 | 8 | 25 | 24 | 69 | 2 |
| | MATHEMATICS | 100 | 6 | 7 | 22 | 21 | 5 | 13 | | 6 | 5 | 15 | |
| | PHYSICAL SCIENCES | 240 | 19 | 19 | 53 | 27 | 10 | 34 | 5 | 17 | 14 | 40 | 2 |
| | PHYSICS | 69 | 4 | 5 | 25 | 6 | | 6 | 2 | 2 | 4 | 15 | |
| | CHEMISTRY | 90 | 2 | 10 | 21 | 18 | 7 | 15 | 1 | 5 | 2 | 8 | 1 |
| | GEOLOGY | 81 | 13 | 4 | 7 | 3 | 3 | 13 | 2 | 10 | 8 | 17 | 1 |
| | ENGINEERING | 94 | 3 | 9 | 25 | 21 | 5 | 7 | 3 | 2 | 5 | 14 | |
| | ALL OTHER FIELDS | 364 | 17 | 29 | 75 | 78 | 36 | 31 | 12 | 18 | 21 | 45 | 2 |
| | LANG. & LIT. | 96 | 1 | 10 | 22 | 22 | 7 | 9 | 2 | 4 | 6 | 13 | |
| | ARTS, HUMANITIES | 78 | 5 | 5 | 21 | 14 | 6 | 4 | 3 | 2 | 4 | 13 | 1 |
| | PROFESSIONS | 102 | 8 | 9 | 19 | 23 | 11 | 10 | 5 | 5 | 3 | 9 | |
| | EDUCATION | 88 | 3 | 5 | 13 | 19 | 12 | 8 | 2 | 7 | 8 | 10 | 1 |

Appendix 6

## 6A. SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO RESEARCH ON PRESENT JOB

### BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on Present Job

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1888 | 259 | 220 | 305 | 572 | 388 | 144 |
| | % | 100.0 | 13.7 | 11.7 | 16.2 | 30.3 | 20.6 | 7.6 |
| None | N | 772 | 116 | 60 | 90 | 230 | 265 | 11 |
| | % | 100.0 | 15.0 | 7.8 | 11.7 | 29.8 | 34.3 | 1.4 |
| 10-29% | N | 262 | 23 | 17 | 39 | 129 | 49 | 5 |
| | % | 100.0 | 8.8 | 6.5 | 14.9 | 49.2 | 18.7 | 1.9 |
| 30-49% | N | 172 | 13 | 17 | 42 | 73 | 18 | 9 |
| | % | 100.0 | 7.6 | 9.9 | 24.4 | 42.4 | 10.5 | 5.2 |
| 50-89% | N | 338 | 56 | 70 | 101 | 81 | 19 | 11 |
| | % | 100.0 | 16.6 | 20.7 | 29.9 | 24.0 | 5.6 | 3.3 |
| 90-100% | N | 135 | 39 | 33 | 19 | 26 | 11 | 7 |
| | % | 100.0 | 28.9 | 24.4 | 14.1 | 19.3 | 8.1 | 5.2 |
| Unknown | N | 209 | 12 | 23 | 14 | 33 | 26 | 101 |
| | % | 100.0 | 5.7 | 11.0 | 6.7 | 15.8 | 12.4 | 48.3 |

### OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on Present Job

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1278 | 226 | 210 | 226 | 314 | 239 | 63 |
| | % | 100.0 | 17.7 | 16.4 | 17.7 | 24.6 | 18.7 | 4.9 |
| None | N | 485 | 80 | 45 | 53 | 124 | 177 | 6 |
| | % | 100.0 | 16.5 | 9.3 | 10.9 | 25.6 | 36.5 | 1.2 |
| 10-29% | N | 98 | 4 | 20 | 14 | 43 | 15 | 2 |
| | % | 100.0 | 4.1 | 20.4 | 14.3 | 43.9 | 15.3 | 2.0 |
| 30-49% | N | 100 | 7 | 13 | 30 | 44 | 4 | 2 |
| | % | 100.0 | 7.0 | 13.0 | 30.0 | 44.0 | 4.0 | 2.0 |
| 50-89% | N | 289 | 50 | 78 | 82 | 67 | 8 | 4 |
| | % | 100.0 | 17.3 | 27.0 | 28.4 | 23.2 | 2.8 | 1.4 |
| 90-100% | N | 195 | 79 | 41 | 33 | 19 | 19 | 4 |
| | % | 100.0 | 40.5 | 21.0 | 16.9 | 9.7 | 9.7 | 2.1 |
| Unknown | N | 111 | 6 | 13 | 14 | 17 | 16 | 45 |
| | % | 100.0 | 5.4 | 11.7 | 12.6 | 15.3 | 14.4 | 40.5 |

## 6B. SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

### BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Administration on Present Job

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1888 | 744 | 504 | 178 | 185 | 133 | 144 |
| | % | 100.0 | 39.4 | 26.7 | 9.4 | 9.8 | 7.0 | 7.6 |
| None | N | 772 | 347 | 178 | 52 | 98 | 86 | 11 |
| | % | 100.0 | 44.9 | 23.1 | 6.7 | 12.7 | 11.1 | 1.4 |
| 10-29% | N | 262 | 101 | 88 | 35 | 23 | 10 | 5 |
| | % | 100.0 | 38.5 | 33.6 | 13.4 | 8.8 | 3.8 | 1.9 |
| 30-49% | N | 172 | 58 | 65 | 24 | 11 | 5 | 9 |
| | % | 100.0 | 33.7 | 37.8 | 14.0 | 6.4 | 2.9 | 5.2 |
| 50-89% | N | 338 | 121 | 112 | 38 | 37 | 19 | 11 |
| | % | 100.0 | 35.8 | 33.1 | 11.2 | 10.9 | 5.6 | 3.3 |
| 90-100% | N | 135 | 68 | 32 | 14 | 5 | 9 | 7 |
| | % | 100.0 | 50.4 | 23.7 | 10.4 | 3.7 | 6.7 | 5.2 |
| Unknown | N | 209 | 49 | 29 | 15 | 11 | 4 | 101 |
| | % | 100.0 | 23.4 | 13.9 | 7.2 | 5.3 | 1.9 | 48.3 |

### OTHER BIO-SCIENCES

Percentage of Time Devoted to Administration on Present Job

| Percentage of Time Devoted to Teaching on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 278 | 600 | 294 | 128 | 119 | 74 | 63 |
| | % | 100.0 | 46.9 | 23.0 | 10.0 | 9.3 | 5.8 | 4.9 |
| None | N | 485 | 259 | 94 | 33 | 53 | 40 | 6 |
| | % | 100.0 | 53.4 | 19.4 | 6.8 | 10.9 | 8.2 | 1.2 |
| 10-29% | N | 98 | 34 | 37 | 11 | 13 | 1 | 2 |
| | % | 100.0 | 34.7 | 37.8 | 11.2 | 13.3 | 1.0 | 2.0 |
| 30-49% | N | 100 | 41 | 26 | 19 | 8 | 4 | 2 |
| | % | 100.0 | 41.0 | 26.0 | 19.0 | 8.0 | 4.0 | 2.0 |
| 50-89% | N | 289 | 116 | 90 | 36 | 27 | 16 | 4 |
| | % | 100.0 | 40.1 | 31.1 | 12.5 | 9.3 | 5.5 | 1.4 |
| 90-100% | N | 195 | 117 | 35 | 20 | 10 | 9 | 4 |
| | % | 100.0 | 60.0 | 17.9 | 10.3 | 5.1 | 4.6 | 2.1 |
| Unknown | N | 111 | 33 | 12 | 9 | 8 | 4 | 45 |
| | % | 100.0 | 29.7 | 10.8 | 8.1 | 7.2 | 3.6 | 40.5 |

## 6C. SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO TEACHING ON PRESENT JOB

### BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Teaching on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1888 | 705 | 387 | 328 | 276 | 48 | 144 |
| | % | 100.0 | 37.3 | 20.5 | 17.4 | 14.6 | 2.5 | 7.6 |
| None | N | 184 | 63 | 23 | 23 | 48 | 20 | 7 |
| | % | 100.0 | 34.2 | 12.5 | 12.5 | 26.1 | 10.9 | 3.8 |
| 10-29% | N | 147 | 29 | 27 | 25 | 53 | 5 | 8 |
| | % | 100.0 | 19.7 | 18.4 | 17.0 | 36.1 | 3.4 | 5.4 |
| 30-49% | N | 179 | 37 | 30 | 53 | 52 | | 7 |
| | % | 100.0 | 20.7 | 16.8 | 29.6 | 29.1 | | 3.9 |
| 50-89% | N | 477 | 139 | 134 | 127 | 55 | 9 | 13 |
| | % | 100.0 | 29.1 | 28.1 | 26.6 | 11.5 | 1.9 | 2.7 |
| 90-100% | N | 692 | 396 | 141 | 84 | 51 | 12 | 8 |
| | % | 100.0 | 57.2 | 20.4 | 12.1 | 7.4 | 1.7 | 1.2 |
| Unknown | N | 209 | 41 | 32 | 16 | 17 | 2 | 101 |
| | % | 100.0 | 19.6 | 15.3 | 7.7 | 8.1 | 1.0 | 48.3 |

### OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Teaching on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1278 | 409 | 208 | 209 | 291 | 98 | 63 |
| | % | 100.0 | 32.0 | 16.3 | 16.4 | 22.8 | 7.7 | 4.9 |
| None | N | 215 | 53 | 12 | 23 | 72 | 52 | 3 |
| | % | 100.0 | 24.7 | 5.6 | 10.7 | 33.5 | 24.2 | 1.4 |
| 10-29% | N | 176 | 31 | 28 | 25 | 70 | 20 | 2 |
| | % | 100.0 | 17.6 | 15.9 | 14.2 | 39.8 | 11.4 | 1.1 |
| 30-49% | N | 138 | 20 | 18 | 43 | 53 | 1 | 3 |
| | % | 100.0 | 14.5 | 13.0 | 31.2 | 38.4 | .7 | 2.2 |
| 50-89% | N | 229 | 62 | 62 | 62 | 32 | 7 | 4 |
| | % | 100.0 | 27.1 | 27.1 | 27.1 | 14.0 | 3.1 | 1.7 |
| 90-100% | N | 409 | 220 | 77 | 41 | 50 | 15 | 6 |
| | % | 100.0 | 53.8 | 18.8 | 10.0 | 12.2 | 3.7 | 1.5 |
| Unknown | N | 111 | 23 | 11 | 15 | 14 | 3 | 45 |
| | % | 100.0 | 20.7 | 9.9 | 13.5 | 12.6 | 2.7 | 40.5 |

## 6D. SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

### BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Administration on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1888 | 744 | 504 | 178 | 185 | 133 | 144 |
| | % | 100.0 | 39.4 | 26.7 | 9.4 | 9.8 | 7.0 | 7.6 |
| None | N | 184 | 77 | 46 | 16 | 14 | 24 | 7 |
| | % | 100.0 | 41.8 | 25.0 | 8.7 | 7.6 | 13.0 | 3.8 |
| 10-29% | N | 147 | 50 | 48 | 15 | 20 | 6 | 8 |
| | % | 100.0 | 34.0 | 32.7 | 10.2 | 13.6 | 4.1 | 5.4 |
| 30-49% | N | 179 | 46 | 64 | 24 | 26 | 12 | 7 |
| | % | 100.0 | 25.7 | 35.8 | 13.4 | 14.5 | 6.7 | 3.9 |
| 50-89% | N | 477 | 157 | 159 | 73 | 50 | 25 | 13 |
| | % | 100.0 | 32.9 | 33.3 | 15.3 | 10.5 | 5.2 | 2.7 |
| 90-100% | N | 692 | 365 | 158 | 35 | 64 | 62 | 8 |
| | % | 100.0 | 52.7 | 22.8 | 5.1 | 9.2 | 9.0 | 1.2 |
| Unknown | N | 209 | 46 | 29 | 15 | 11 | 4 | 101 |
| | % | 100.0 | 23.4 | 13.9 | 7.2 | 5.3 | 1.9 | 48.3 |

### OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Administration on Present Job

| Percentage of Time Devoted to Research on First Postdoctoral Job | | Total | None | 10-29% | 30-49% | 50-89% | 90-100% | Unknown |
|---|---|---|---|---|---|---|---|---|
| Total | N | 1278 | 600 | 294 | 128 | 119 | 74 | 63 |
| | % | 100.0 | 46.9 | 23.0 | 10.0 | 9.3 | 5.8 | 4.9 |
| None | N | 215 | 115 | 41 | 31 | 18 | 7 | 3 |
| | % | 100.0 | 53.5 | 19.1 | 14.4 | 8.4 | 3.3 | 1.4 |
| 10-29% | N | 176 | 69 | 61 | 19 | 10 | 15 | 2 |
| | % | 100.0 | 39.2 | 34.7 | 10.8 | 5.7 | 8.5 | 1.1 |
| 30-49% | N | 138 | 46 | 42 | 24 | 18 | 5 | 3 |
| | % | 100.0 | 33.3 | 30.4 | 17.4 | 13.0 | 3.6 | 2.2 |
| 50-89% | N | 229 | 97 | 64 | 22 | 29 | 13 | 4 |
| | % | 100.0 | 42.4 | 27.9 | 9.6 | 12.7 | 5.7 | 1.7 |
| 90-100% | N | 409 | 240 | 74 | 23 | 36 | 30 | 6 |
| | % | 100.0 | 58.7 | 18.1 | 5.6 | 8.8 | 7.3 | 1.5 |
| Unknown | N | 111 | 33 | 12 | 9 | 8 | 4 | 45 |
| | % | 100.0 | 29.7 | 10.8 | 8.1 | 7.2 | 3.6 | 40.5 |

Appendix 7

## NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

| COHORT | FIELD | TOTAL GROUP | RESEARCH PHS-SUPPORTED: OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH | NOT SUPPORTED BY PHS: OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH |
|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 3240 | 337 | 85 | 286 | 131 | 273 | 606 | 1059 | 463 |
| COHORT 1935 | TOTAL, ALL FIELDS | 284 | 19 | 1 | 24 | 9 | 35 | 65 | 97 | 34 |
| | BIO-SCIENCES, TOTAL | 115 | 14 | 1 | 14 | 5 | 9 | 18 | 36 | 18 |
| | BASIC MED. SCIENCES | 53 | 10 | 1 | 5 | 2 | 7 | 4 | 17 | 7 |
| | PHYSIOLOGY | 24 | 5 | | 2 | 1 | 5 | 2 | 5 | 4 |
| | PHARMACOLOGY | 3 | | | | | | | 3 | |
| | BIOCHEMISTRY | 13 | 2 | | 2 | | 2 | | 6 | 1 |
| | MICROBIOLOGY | 13 | 3 | 1 | 1 | 1 | | 2 | 3 | 2 |
| | OTHER BIO-SCIENCES | 62 | 4 | | 9 | 3 | 2 | 14 | 19 | 11 |
| | BOTANY | 19 | 1 | | | 1 | | 9 | 2 | 6 |
| | GENETICS | 10 | 1 | | | | | 1 | 4 | 4 |
| | ZOOLOGY | 24 | 2 | | 4 | 2 | 2 | 2 | 11 | 1 |
| | MISC. BIOLOGY | 9 | | | 5 | | | 2 | 2 | |
| | MEDICAL SCIENCES | 4 | | | 2 | | 1 | 1 | | |
| | AGRIC. SCIENCES | 24 | | | 1 | 2 | 3 | 10 | 7 | 1 |
| | PSYCHOLOGY | 5 | 1 | | 2 | | | | | 2 |
| | SOCIAL SCIENCES | 36 | 3 | | 1 | | 8 | 5 | 17 | 2 |
| | SOCIOLOGY | 14 | 3 | | 1 | | 3 | | 5 | 2 |
| | ECONOMICS | 8 | | | | | 2 | 1 | 5 | |
| | POLITICAL SCIENCE | 7 | | | | | 1 | 1 | 5 | |
| | HIST., GEOGRAPHY | 7 | | | | | 2 | 3 | 2 | |
| | M-P-E FIELDS | 76 | 1 | | 2 | 2 | 5 | 27 | 28 | 11 |
| | MATHEMATICS | 12 | | | | | | 10 | 1 | 1 |
| | PHYSICAL SCIENCES | 49 | 1 | | 2 | 2 | 3 | 14 | 21 | 6 |
| | PHYSICS | 18 | | | 1 | 1 | | 7 | 5 | 4 |
| | CHEMISTRY | 19 | 1 | | 1 | 1 | | 2 | 12 | 2 |
| | GEOLOGY | 12 | | | | | 3 | 5 | 4 | |
| | ENGINEERING | 15 | | | | | 2 | 3 | 6 | 4 |
| | ALL OTHER FIELDS | 24 | | | 2 | | 9 | 4 | 9 | |
| | LANG. & LIT. | 5 | | | 2 | | 1 | 2 | | |
| | ARTS, HUMANITIES | 11 | | | | | 6 | 2 | 3 | |
| | PROFESSIONS | 5 | | | | | 2 | | 3 | |
| | EDUCATION | 3 | | | | | | | 3 | |
| COHORT 1940 | TOTAL, ALL FIELDS | 365 | 23 | 9 | 36 | 19 | 35 | 72 | 131 | 40 |
| | BIO-SCIENCES, TOTAL | 169 | 18 | 7 | 32 | 13 | 7 | 26 | 52 | 14 |
| | BASIC MED. SCIENCES | 124 | 14 | 5 | 27 | 12 | 6 | 17 | 37 | 6 |
| | PHYSIOLOGY | 38 | 6 | 2 | 12 | 3 | 3 | 6 | 4 | 2 |
| | PHARMACOLOGY | 6 | 1 | | | 2 | | | 3 | |
| | BIOCHEMISTRY | 56 | 6 | 3 | 11 | 3 | 2 | 6 | 22 | 3 |
| | MICROBIOLOGY | 24 | 1 | | 4 | 4 | 1 | 5 | 8 | 1 |
| | OTHER BIO-SCIENCES | 45 | 4 | 2 | 5 | 1 | 1 | 9 | 15 | 8 |
| | BOTANY | 18 | 1 | | 3 | | 1 | 3 | 7 | 3 |
| | GENETICS | 8 | | 1 | | | | | 5 | 2 |
| | ZOOLOGY | 19 | 3 | 1 | 2 | 1 | | 6 | 3 | 3 |
| | MISC. BIOLOGY | | | | | | | | | |
| | MEDICAL SCIENCES | 3 | 1 | | | 1 | | 1 | | |
| | AGRIC. SCIENCES | 22 | | | | | | 6 | 7 | 9 |
| | PSYCHOLOGY | 15 | | | 2 | 2 | 3 | 3 | 5 | |
| | SOCIAL SCIENCES | 51 | 1 | | 2 | | 13 | 10 | 20 | 5 |
| | SOCIOLOGY | 12 | | | 2 | | 4 | 3 | 2 | 1 |
| | ECONOMICS | 20 | | | | | 5 | 4 | 8 | 3 |
| | POLITICAL SCIENCE | 9 | 1 | | | | 3 | 2 | 2 | 1 |
| | HIST., GEOGRAPHY | 10 | | | | | 1 | 1 | 8 | |
| | M-P-E FIELDS | 82 | 1 | 1 | | 3 | 4 | 24 | 38 | 11 |
| | MATHEMATICS | 9 | | | | | | 2 | 4 | 3 |
| | PHYSICAL SCIENCES | 63 | 1 | 1 | | 2 | 3 | 21 | 29 | 6 |
| | PHYSICS | 25 | 1 | | | | 1 | 11 | 9 | 3 |
| | CHEMISTRY | 25 | | 1 | | 2 | 1 | 5 | 14 | 2 |
| | GEOLOGY | 13 | | | | | 1 | 5 | 6 | 1 |
| | ENGINEERING | 10 | | | | 1 | 1 | 1 | 5 | 2 |
| | ALL OTHER FIELDS | 23 | 2 | 1 | | | 8 | 2 | 9 | 1 |
| | LANG. & LIT. | 8 | 1 | | | | 4 | | 3 | |
| | ARTS, HUMANITIES | 7 | | | | | 2 | 1 | 3 | 1 |
| | PROFESSIONS | 4 | | | | | 1 | 1 | 2 | |
| | EDUCATION | 4 | 1 | 1 | | | 1 | | 1 | |

Appendix 7, continued

## NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

| COHORT | FIELD | TOTAL GROUP | RESEARCH PHS-SUPPORTED | | | | NOT SUPPORTED BY PHS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | OTHER SUPPORT | | | | OTHER SUPPORT | | | |
| | | | NONE | ONLY GOVT | ONLY PRIV | BOTH | NONE | ONLY GOVT | ONLY PRIV | BOTH |
| COHORT 1945 | TOTAL, ALL FIELDS | 336 | 30 | 8 | 29 | 22 | 29 | 57 | 115 | 46 |
| | BIO-SCIENCES, TOTAL | 129 | 20 | 5 | 20 | 14 | 5 | 17 | 34 | 14 |
| | BASIC MED. SCIENCES | 65 | 17 | 4 | 12 | 8 | 2 | 6 | 15 | 1 |
| | PHYSIOLOGY | 15 | 2 | 2 | 5 | 1 | 1 | 2 | 2 | |
| | PHARMACOLOGY | 3 | | | | | | | 3 | |
| | BIOCHEMISTRY | 30 | 10 | 2 | 6 | 6 | 1 | | 4 | 1 |
| | MICROBIOLOGY | 17 | 5 | | 1 | 1 | | 4 | 6 | |
| | OTHER BIO-SCIENCES | 64 | 3 | 1 | 8 | 6 | 3 | 11 | 19 | 13 |
| | BOTANY | 31 | 1 | | 2 | 2 | 2 | 5 | 12 | 7 |
| | GENETICS | 5 | | | | | | 1 | 1 | 3 |
| | ZOOLOGY | 28 | 2 | 1 | 6 | 4 | 1 | 5 | 6 | 3 |
| | MISC. BIOLOGY | | | | | | | | | |
| | MEDICAL SCIENCES | 7 | 2 | | 2 | 1 | | 1 | 1 | |
| | AGRIC. SCIENCES | 30 | | | 1 | 2 | 2 | 4 | 14 | 7 |
| | PSYCHOLOGY | 19 | 4 | | 3 | 2 | 3 | 3 | 2 | 2 |
| | SOCIAL SCIENCES | 45 | 2 | | | | 8 | 4 | 24 | 7 |
| | SOCIOLOGY | 9 | 1 | | | | 3 | 2 | 1 | 2 |
| | ECONOMICS | 24 | 1 | | | | 2 | 2 | 17 | 2 |
| | POLITICAL SCIENCE | 4 | | | | | 1 | | | 3 |
| | HIST., GEOGRAPHY | 8 | | | | | 2 | | 6 | |
| | M-P-E FIELDS | 79 | 2 | 2 | 3 | 3 | 2 | 26 | 26 | 15 |
| | MATHEMATICS | 16 | | | | 2 | 1 | 6 | 1 | 6 |
| | PHYSICAL SCIENCES | 54 | 2 | 2 | 3 | 1 | | 17 | 20 | 9 |
| | PHYSICS | 22 | | | | 1 | | 11 | 4 | 6 |
| | CHEMISTRY | 23 | 2 | 2 | 3 | | | 4 | 11 | 1 |
| | GEOLOGY | 9 | | | | | | 2 | 5 | 2 |
| | ENGINEERING | 9 | | | | | 1 | 3 | 5 | |
| | ALL OTHER FIELDS | 27 | | 1 | | | 9 | 2 | 14 | 1 |
| | LANG. & LIT. | 12 | | 1 | | | 5 | | 6 | |
| | ARTS, HUMANITIES | 6 | | | | | 4 | | 2 | |
| | PROFESSIONS | 6 | | | | | | 2 | 4 | |
| | EDUCATION | 3 | | | | | | | 2 | 1 |
| COHORT 1950 | TOTAL, ALL FIELDS | 487 | 42 | 10 | 32 | 32 | 20 | 104 | 155 | 92 |
| | BIO-SCIENCES, TOTAL | 198 | 38 | 6 | 24 | 19 | 4 | 26 | 50 | 31 |
| | BASIC MED. SCIENCES | 121 | 27 | 3 | 22 | 15 | 3 | 13 | 30 | 8 |
| | PHYSIOLOGY | 22 | 8 | 1 | 2 | 1 | | 2 | 5 | 3 |
| | PHARMACOLOGY | 10 | 1 | | 1 | 2 | | | 5 | 1 |
| | BIOCHEMISTRY | 48 | 10 | 1 | 11 | 7 | 1 | 7 | 11 | |
| | MICROBIOLOGY | 41 | 8 | 1 | 8 | 5 | 2 | 4 | 9 | 4 |
| | OTHER BIO-SCIENCES | 77 | 11 | 3 | 2 | 4 | 1 | 13 | 20 | 23 |
| | BOTANY | 30 | 4 | 1 | | 2 | | 6 | 8 | 9 |
| | GENETICS | 12 | | | 1 | | | | 7 | 4 |
| | ZOOLOGY | 35 | 7 | 2 | 1 | 2 | 1 | 7 | 5 | 10 |
| | MISC. BIOLOGY | | | | | | | | | |
| | MEDICAL SCIENCES | 12 | 2 | 1 | 2 | 3 | | | 3 | 1 |
| | AGRIC. SCIENCES | 51 | | | 1 | 4 | 3 | 5 | 17 | 21 |
| | PSYCHOLOGY | 17 | 1 | 1 | 3 | 1 | | 4 | 2 | 5 |
| | SOCIAL SCIENCES | 37 | | 1 | 2 | 2 | 3 | 6 | 19 | 4 |
| | SOCIOLOGY | 13 | | | 2 | 2 | | 2 | 5 | 2 |
| | ECONOMICS | 10 | | | | | | 2 | 7 | 1 |
| | POLITICAL SCIENCE | 5 | | | | | | 1 | 3 | 1 |
| | HIST., GEOGRAPHY | 9 | | 1 | | | 3 | 1 | 4 | |
| | M-P-E FIELDS | 151 | 1 | 1 | | 2 | 5 | 61 | 52 | 29 |
| | MATHEMATICS | 25 | | | | | | 9 | 6 | 10 |
| | PHYSICAL SCIENCES | 107 | 1 | 1 | | 1 | 3 | 48 | 36 | 17 |
| | PHYSICS | 37 | | 1 | | | 1 | 22 | 6 | 7 |
| | CHEMISTRY | 28 | 1 | | | 1 | 1 | 7 | 16 | 2 |
| | GEOLOGY | 42 | | | | | 1 | 19 | 14 | 8 |
| | ENGINEERING | 19 | | | | 1 | 2 | 4 | 10 | 2 |
| | ALL OTHER FIELDS | 21 | | | | 1 | 5 | 2 | 12 | 1 |
| | LANG. & LIT. | 5 | | | | | 2 | | 3 | |
| | ARTS, HUMANITIES | 8 | | | | | 2 | 1 | 4 | 1 |
| | PROFESSIONS | 5 | | | | 1 | | 1 | 3 | |
| | EDUCATION | 3 | | | | | 1 | | 2 | |

Appendix 7, continued

## NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

| COHORT | FIELD | TOTAL GROUP | RESEARCH PHS-SUPPORTED: OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH | NOT SUPPORTED BY PHS: OTHER SUPPORT NONE | ONLY GOVT | ONLY PRIV | BOTH |
|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 768 | 89 | 32 | 75 | 30 | 52 | 143 | 224 | 123 |
| | BIO-SCIENCES, TOTAL | 378 | 68 | 28 | 60 | 18 | 13 | 64 | 82 | 45 |
| | BASIC MED. SCIENCES | 259 | 53 | 20 | 55 | 10 | 10 | 36 | 53 | 22 |
| | PHYSIOLOGY | 74 | 22 | 4 | 18 | 2 | 1 | 6 | 10 | 11 |
| | PHARMACOLOGY | 21 | 6 | 2 | 4 | | | 2 | 5 | 2 |
| | BIOCHEMISTRY | 95 | 12 | 9 | 20 | 4 | 7 | 9 | 26 | 8 |
| | MICROBIOLOGY | 69 | 13 | 5 | 13 | 4 | 2 | 19 | 12 | 1 |
| | OTHER BIO-SCIENCES | 119 | 15 | 8 | 5 | 8 | 3 | 28 | 29 | 23 |
| | BOTANY | 45 | 2 | | 1 | 2 | | 14 | 18 | 8 |
| | GENETICS | 15 | 3 | 1 | | 4 | | 1 | 2 | 4 |
| | ZOOLOGY | 35 | 6 | 3 | 2 | 1 | 2 | 6 | 5 | 10 |
| | MISC. BIOLOGY | 24 | 4 | 4 | 2 | 1 | 1 | 7 | 4 | 1 |
| | MEDICAL SCIENCES | 20 | 4 | | 3 | 1 | 2 | 2 | 7 | 1 |
| | AGRIC. SCIENCES | 78 | 2 | | 4 | 5 | 2 | 10 | 28 | 27 |
| | PSYCHOLOGY | 20 | 2 | 3 | 3 | 2 | | 5 | 4 | 1 |
| | SOCIAL SCIENCES | 74 | 5 | | 4 | 1 | 12 | 9 | 32 | 11 |
| | SOCIOLOGY | 26 | 4 | | 4 | 1 | 1 | 2 | 8 | 6 |
| | ECONOMICS | 18 | | | | | 1 | 4 | 9 | 4 |
| | POLITICAL SCIENCE | 18 | | | | | 4 | 2 | 11 | 1 |
| | HIST., GEOGRAPHY | 12 | 1 | | | | 6 | 1 | 4 | |
| | M-P-E FIELDS | 171 | 6 | | | 2 | 12 | 49 | 65 | 37 |
| | MATHEMATICS | 32 | 2 | | | | 3 | 8 | 11 | 8 |
| | PHYSICAL SCIENCES | 107 | 4 | | | 2 | 5 | 32 | 42 | 22 |
| | PHYSICS | 37 | | | | | 1 | 12 | 12 | 12 |
| | CHEMISTRY | 41 | 4 | | | 1 | 4 | 5 | 20 | 7 |
| | GEOLOGY | 29 | | | | 1 | | 15 | 10 | 3 |
| | ENGINEERING | 32 | | | | | 4 | 9 | 12 | 7 |
| | ALL OTHER FIELDS | 27 | 2 | 1 | 1 | 1 | 11 | 4 | 6 | 1 |
| | LANG. & LIT. | 5 | | | | 1 | 3 | | 1 | |
| | ARTS, HUMANITIES | 10 | 1 | 1 | | | 5 | 2 | | 1 |
| | PROFESSIONS | 10 | | | 1 | | 3 | 1 | 5 | |
| | EDUCATION | 2 | 1 | | | | | 1 | | |
| COHORT 1960 | TOTAL, ALL FIELDS | 1000 | 134 | 25 | 90 | 19 | 102 | 165 | 337 | 128 |
| | BIO-SCIENCES, TOTAL | 524 | 123 | 22 | 82 | 13 | 17 | 74 | 152 | 41 |
| | BASIC MED. SCIENCES | 338 | 101 | 18 | 63 | 8 | 7 | 38 | 90 | 13 |
| | PHYSIOLOGY | 76 | 17 | 3 | 17 | 2 | 1 | 8 | 23 | 5 |
| | PHARMACOLOGY | 20 | 7 | | 1 | | 1 | 1 | 10 | |
| | BIOCHEMISTRY | 156 | 47 | 10 | 29 | 5 | 2 | 15 | 42 | 6 |
| | MICROBIOLOGY | 86 | 30 | 5 | 16 | 1 | 3 | 14 | 15 | 2 |
| | OTHER BIO-SCIENCES | 186 | 22 | 4 | 19 | 5 | 10 | 36 | 62 | 28 |
| | BOTANY | 53 | 4 | | 7 | 1 | 3 | 6 | 24 | 8 |
| | GENETICS | 37 | 5 | 2 | 3 | 1 | 2 | 7 | 12 | 5 |
| | ZOOLOGY | 50 | 3 | | 5 | 2 | 2 | 12 | 18 | 8 |
| | MISC. BIOLOGY | 46 | 10 | 2 | 4 | 1 | 3 | 11 | 8 | 7 |
| | MEDICAL SCIENCES | 16 | 3 | | 1 | | | 2 | 9 | 1 |
| | AGRIC. SCIENCES | 53 | 1 | | 1 | | | 12 | 26 | 13 |
| | PSYCHOLOGY | 23 | 2 | 2 | 3 | 1 | | 6 | 6 | 3 |
| | SOCIAL SCIENCES | 93 | 3 | 1 | 2 | 2 | 13 | 9 | 46 | 17 |
| | SOCIOLOGY | 29 | 3 | 1 | 2 | 1 | 4 | 3 | 11 | 4 |
| | ECONOMICS | 33 | | | | 1 | | 4 | 16 | 12 |
| | POLITICAL SCIENCE | 19 | | | | | 5 | 2 | 11 | 1 |
| | HIST., GEOGRAPHY | 12 | | | | | 4 | | 8 | |
| | M-P-E FIELDS | 251 | 1 | | 1 | 1 | 59 | 60 | 80 | 49 |
| | MATHEMATICS | 50 | 1 | | | | 4 | 14 | 16 | 15 |
| | PHYSICAL SCIENCES | 150 | | | 1 | 1 | 4 | 46 | 64 | 34 |
| | PHYSICS | 55 | | | | 1 | 1 | 16 | 16 | 21 |
| | CHEMISTRY | 58 | | | 1 | | 1 | 13 | 35 | 8 |
| | GEOLOGY | 37 | | | | | 2 | 17 | 13 | 5 |
| | ENGINEERING | 51 | | | | | 51 | | | |
| | ALL OTHER FIELDS | 40 | 1 | | | 2 | 13 | 2 | 18 | 4 |
| | LANG. & LIT. | 11 | 1 | | | | 6 | | 4 | |
| | ARTS, HUMANITIES | 14 | | | | 1 | 6 | | 7 | |
| | PROFESSIONS | 11 | | | | 1 | 1 | 1 | 6 | 2 |
| | EDUCATION | 4 | | | | | | 1 | 1 | 2 |

## Appendix 8

## SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

| COHORT | FIELD | TOTAL | UNIV | V.A. | OTHR GOVT | PRIV FDN. | OTHR FSHP | HUSB WIFE | FA., MO. | OWN EARN | SAV-INGS | BOR-ROW. | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 100.0 | 34.8 | 8.7 | 5.5 | 2.9 | 3.1 | 7.5 | 7.0 | 21.5 | 5.3 | 2.0 | 1.7 |
| COHORT 1935 | TOTAL, ALL FIELDS | 100.0 | 40.9 | .1 | .4 | 2.3 | 1.6 | 3.7 | 11.8 | 27.9 | 6.9 | 3.1 | 1.3 |
| | BIO-SCIENCES, TOTAL | 100.0 | 51.3 | .5 | .7 | 3.2 | 2.6 | 3.5 | 8.7 | 20.2 | 5.6 | 2.8 | .9 |
| | BASIC MED. SCIENCES | 100.0 | 49.3 | .7 | .6 | 5.3 | 3.6 | 3.8 | 8.6 | 18.2 | 6.1 | 2.7 | 1.1 |
| | PHYSIOLOGY | 100.0 | 58.4 | | | 6.1 | .4 | 3.9 | 11.3 | 12.9 | 5.0 | 2.0 | |
| | PHARMACOLOGY | 99.9 | 27.9 | | .7 | | 15.0 | 1.4 | 5.0 | 27.1 | 9.3 | 6.4 | 7.1 |
| | BIOCHEMISTRY | 99.9 | 53.1 | | | 4.4 | 4.1 | 3.4 | 7.8 | 18.4 | 7.8 | .9 | |
| | MICROBIOLOGY | 100.1 | 38.0 | 2.4 | 2.0 | 6.3 | 5.0 | 4.6 | 5.9 | 24.1 | 5.7 | 4.1 | 2.0 |
| | OTHER BIO-SCIENCES | 99.9 | 53.4 | .3 | .8 | 1.1 | 1.6 | 3.2 | 8.7 | 22.2 | 5.1 | 2.9 | .6 |
| | BOTANY | 100.0 | 50.4 | .9 | 1.6 | 1.4 | 3.3 | 3.0 | 9.1 | 22.6 | 3.3 | 2.6 | 1.8 |
| | GENETICS | 100.0 | 58.3 | | | | 3.9 | 6.7 | | 20.0 | 8.3 | 2.8 | |
| | ZOOLOGY | 100.1 | 55.2 | | .8 | 1.8 | | 1.9 | 11.6 | 22.6 | 4.7 | 1.5 | |
| | MISC. BIOLOGY | 100.0 | 52.4 | | | | | 4.1 | 7.2 | 22.1 | 7.6 | 6.6 | |
| | MEDICAL SCIENCES | 100.1 | 23.0 | | | 14.1 | 1.6 | 6.8 | 18.1 | 28.6 | 3.8 | 3.8 | .3 |
| | AGRIC. SCIENCES | 99.9 | 54.2 | | 1.4 | .3 | 3.0 | 4.2 | 3.7 | 23.6 | 4.9 | 4.2 | .4 |
| | PSYCHOLOGY | 99.9 | 34.6 | | .2 | 4.9 | | 3.4 | 10.8 | 32.7 | 9.3 | 3.7 | .3 |
| | SOCIAL SCIENCES | 99.8 | 31.9 | | .1 | 1.7 | .6 | 5.0 | 14.0 | 33.2 | 8.5 | 3.5 | 1.3 |
| | SOCIOLOGY | 100.1 | 24.1 | | .3 | 2.3 | 1.3 | 7.7 | 13.8 | 37.6 | 7.2 | 3.4 | 2.4 |
| | ECONOMICS | 100.1 | 35.3 | | | 2.0 | .4 | 2.0 | 9.4 | 37.1 | 10.8 | 3.1 | |
| | POLITICAL SCIENCE | 100.1 | 46.1 | .2 | | .9 | .5 | 4.0 | 20.2 | 21.1 | 5.3 | 1.6 | .2 |
| | HIST., GEOGRAPHY | 100.1 | 24.2 | | .2 | 1.8 | .2 | 5.4 | 12.3 | 36.5 | 11.4 | 6.0 | 2.1 |
| | M-P-E FIELDS | 100.0 | 45.0 | | .2 | .9 | 1.8 | 2.1 | 14.4 | 25.4 | 6.1 | 2.8 | 1.3 |
| | MATHEMATICS | 100.1 | 48.5 | | | | 1.1 | .6 | 12.9 | 22.8 | 6.8 | 2.5 | 4.9 |
| | PHYSICAL SCIENCES | 99.8 | 47.5 | | .3 | .3 | 1.4 | 2.6 | 13.3 | 25.3 | 5.7 | 2.8 | .6 |
| | PHYSICS | 100.0 | 51.8 | | .3 | .3 | .8 | 3.5 | 12.7 | 21.7 | 6.8 | 1.5 | .6 |
| | CHEMISTRY | 100.0 | 50.3 | | .1 | | 2.8 | 1.5 | 12.5 | 26.1 | 3.9 | 1.9 | .9 |
| | GEOLOGY | 100.0 | 38.8 | .2 | .5 | .8 | .2 | 3.1 | 15.1 | 28.6 | 6.8 | 5.6 | .3 |
| | ENGINEERING | 100.1 | 33.8 | | .2 | 3.4 | 3.7 | 2.0 | 19.1 | 28.2 | 6.8 | 2.9 | |
| | ALL OTHER FIELDS | 100.1 | 27.8 | | | 1.5 | .9 | 4.5 | 12.2 | 38.7 | 8.9 | 2.8 | 2.8 |
| | LANG. & LIT. | 100.0 | 33.0 | | | .3 | | 5.7 | 13.3 | 34.3 | 7.4 | 1.7 | 4.3 |
| | ARTS, HUMANITIES | 100.1 | 28.9 | | | 2.0 | 1.9 | 5.4 | 16.3 | 28.1 | 10.6 | 2.8 | 4.1 |
| | PROFESSIONS | 99.9 | 24.5 | | .2 | 1.2 | 2.1 | 2.6 | 13.1 | 44.0 | 6.7 | 4.5 | 1.0 |
| | EDUCATION | 100.0 | 19.7 | | | 3.3 | | 2.8 | 2.8 | 56.7 | 11.9 | 2.8 | |
| COHORT 1940 | TOTAL, ALL FIELDS | 100.2 | 42.2 | .1 | 1.1 | 2.6 | 3.5 | 4.3 | 10.6 | 25.0 | 5.4 | 3.2 | 2.2 |
| | BIO-SCIENCES, TOTAL | 100.0 | 48.0 | | 1.5 | 3.4 | 4.7 | 4.3 | 9.6 | 20.6 | 4.1 | 2.5 | 1.3 |
| | BASIC MED. SCIENCES | 100.0 | 47.3 | | 1.3 | 3.8 | 5.9 | 4.2 | 10.4 | 19.9 | 4.0 | 2.4 | .8 |
| | PHYSIOLOGY | 100.0 | 48.9 | | .7 | 3.4 | 2.9 | 4.6 | 10.8 | 21.7 | 4.0 | 1.6 | 1.4 |
| | PHARMACOLOGY | 100.0 | 25.0 | | | 2.9 | 23.8 | 2.5 | 20.8 | 19.2 | .8 | 1.7 | 3.3 |
| | BIOCHEMISTRY | 100.1 | 49.5 | | .6 | 5.2 | 5.2 | 3.7 | 9.9 | 19.3 | 3.5 | 2.8 | .4 |
| | MICROBIOLOGY | 100.1 | 48.0 | | 3.5 | 2.2 | 6.0 | 5.2 | 7.8 | 18.8 | 5.7 | 2.9 | |
| | OTHER BIO-SCIENCES | 99.9 | 49.4 | | 1.9 | 2.5 | 2.2 | 4.5 | 8.1 | 21.9 | 4.3 | 2.7 | 2.4 |
| | BOTANY | 99.9 | 47.0 | | 1.6 | 2.8 | .9 | 4.9 | 7.8 | 23.6 | 2.1 | 2.5 | 6.7 |
| | GENETICS | 99.9 | 50.0 | | 5.0 | | 3.1 | 3.4 | 8.4 | 17.5 | 8.1 | 4.4 | |
| | ZOOLOGY | 99.9 | 50.9 | | 1.0 | 3.2 | 3.0 | 4.7 | 7.7 | 22.5 | 4.7 | 2.2 | |
| | MISC. BIOLOGY | 100.0 | 50.0 | | | | | | 50.0 | | | | |
| | MEDICAL SCIENCES | 100.0 | 21.6 | | .4 | 15.2 | 4.0 | 3.2 | 14.8 | 36.8 | .8 | 3.2 | |
| | AGRIC. SCIENCES | 99.9 | 42.7 | | 4.8 | 1.4 | 9.4 | 3.1 | 4.2 | 27.0 | 3.2 | 4.1 | |
| | PSYCHOLOGY | 99.9 | 43.7 | | | 1.4 | 1.3 | 7.1 | 12.7 | 22.4 | 3.7 | 3.8 | 3.8 |
| | SOCIAL SCIENCES | 100.0 | 33.7 | .2 | .3 | 3.8 | 1.4 | 4.6 | 11.8 | 27.0 | 8.1 | 4.2 | 4.9 |
| | SOCIOLOGY | 100.0 | 30.2 | .7 | 1.0 | 3.7 | 1.3 | 2.8 | 15.7 | 26.8 | 7.5 | 6.3 | 4.0 |
| | ECONOMICS | 100.1 | 36.7 | | | 6.3 | 3.3 | 4.1 | 7.4 | 23.2 | 10.0 | 2.9 | 6.2 |
| | POLITICAL SCIENCE | 99.8 | 36.3 | | | 3.8 | | 8.3 | 9.4 | 31.0 | 5.6 | 3.3 | 2.1 |
| | HIST., GEOGRAPHY | 100.0 | 30.9 | | .2 | .2 | | 4.2 | 15.8 | 28.9 | 8.5 | 4.5 | 6.8 |
| | M-P-E FIELDS | 100.2 | 49.6 | .1 | .7 | 1.3 | 3.8 | 3.4 | 12.0 | 21.2 | 4.5 | 2.8 | .8 |
| | MATHEMATICS | 101.4 | 56.9 | | .5 | .3 | 1.5 | 1.6 | 9.2 | 21.1 | 6.1 | 2.6 | 1.6 |
| | PHYSICAL SCIENCES | 99.9 | 50.3 | .1 | .5 | 1.8 | 3.1 | 4.4 | 14.7 | 18.4 | 3.0 | 2.8 | .8 |
| | PHYSICS | 100.0 | 57.2 | | .4 | .6 | 2.4 | 6.7 | 14.8 | 11.9 | 3.0 | 2.4 | .6 |
| | CHEMISTRY | 99.9 | 54.6 | | .4 | 2.7 | 4.4 | 2.2 | 14.6 | 14.7 | 2.3 | 2.9 | 1.1 |
| | GEOLOGY | 100.0 | 38.8 | .4 | .7 | 1.6 | 2.2 | 5.0 | 14.7 | 28.9 | 3.8 | 3.2 | .7 |
| | ENGINEERING | 99.9 | 40.4 | | 1.8 | .4 | 8.4 | 1.6 | 5.1 | 30.9 | 8.5 | 2.8 | |
| | ALL OTHER FIELDS | 100.0 | 26.0 | .2 | .6 | .9 | 1.4 | 4.6 | 10.6 | 39.2 | 8.8 | 3.9 | 3.8 |
| | LANG. & LIT. | 99.9 | 33.1 | | | .1 | .9 | 4.3 | 15.7 | 29.4 | 5.4 | 6.4 | 4.6 |
| | ARTS, HUMANITIES | 100.1 | 28.4 | .2 | 1.8 | 1.1 | 2.8 | 5.1 | 13.1 | 34.1 | 8.9 | 3.0 | 1.6 |
| | PROFESSIONS | 100.1 | 22.1 | 1.1 | .3 | 2.4 | 1.3 | 4.7 | 9.5 | 42.1 | 8.7 | 2.9 | 5.0 |
| | EDUCATION | 100.0 | 16.6 | | | .6 | .4 | 4.2 | 1.6 | 56.2 | 13.6 | 2.4 | 4.4 |

Appendix 8, continued

## SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

| COHORT | FIELD | TOTAL | UNIV | V.A. | OTHR GOVT | PRIV FDN. | OTHR FSHP | HUSB WIFE | FA., MO. | OWN EARN | SAV-INGS | BOR-ROW | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 100.0 | 40.2 | .7 | 2.4 | 2.7 | 3.9 | 5.8 | 7.4 | 27.2 | 5.4 | 1.9 | 2.4 |
| | BIO-SCIENCES, TOTAL | 100.1 | 46.9 | .9 | 2.2 | 3.7 | 5.0 | 6.0 | 6.7 | 21.1 | 3.9 | 1.8 | 1.9 |
| | BASIC MED. SCIENCES | 99.8 | 43.9 | .7 | 2.1 | 5.5 | 7.3 | 4.9 | 6.5 | 22.7 | 3.9 | .9 | 1.4 |
| | PHYSIOLOGY | 100.1 | 43.2 | | 1.5 | 2.1 | 6.2 | 2.4 | 13.8 | 29.7 | 1.2 | | |
| | PHARMACOLOGY | 100.0 | 36.1 | | | .6 | 12.2 | 3.9 | .6 | 33.9 | 3.3 | 1.1 | 8.3 |
| | BIOCHEMISTRY | 100.0 | 48.5 | | 4.4 | 8.7 | 6.9 | 3.3 | 4.4 | 16.9 | 4.6 | 1.3 | 1.0 |
| | MICROBIOLOGY | 99.9 | 40.8 | 2.7 | | 5.9 | 6.8 | 10.5 | 6.2 | 20.5 | 5.4 | 1.1 | |
| | OTHER BIO-SCIENCES | 100.0 | 49.6 | 1.1 | 2.2 | 2.1 | 3.0 | 6.9 | 6.8 | 19.6 | 3.8 | 2.5 | 2.4 |
| | BOTANY | 99.8 | 52.2 | 2.2 | 2.8 | 1.0 | 4.6 | 6.7 | 6.9 | 15.2 | 3.9 | 1.9 | 2.4 |
| | GENETICS | 100.0 | 59.2 | | | 7.5 | | 9.2 | .8 | 20.8 | | 2.5 | |
| | ZOOLOGY | 99.7 | 46.5 | .4 | 2.0 | 2.1 | 2.1 | 6.4 | 7.6 | 23.0 | 4.0 | 2.9 | 2.7 |
| | MISC. BIOLOGY | 100.0 | 30.0 | | | | | 40.0 | | | 30.0 | | |
| | MEDICAL SCIENCES | 100.0 | 31.2 | | 8.8 | 6.4 | 2.0 | 10.0 | 9.6 | 20.4 | 8.8 | 2.0 | .8 |
| | AGRIC. SCIENCES | 100.0 | 49.1 | .3 | 3.8 | 1.4 | 13.1 | 4.7 | 2.3 | 17.7 | 6.7 | .9 | |
| | PSYCHOLOGY | 100.1 | 39.1 | 1.9 | .8 | .3 | | 8.9 | 13.4 | 26.5 | 3.9 | 1.5 | 3.8 |
| | SOCIAL SCIENCES | 100.0 | 35.2 | 1.0 | 1.0 | 3.3 | 2.9 | 7.3 | 8.1 | 30.0 | 6.6 | 2.8 | 1.8 |
| | SOCIOLOGY | 100.0 | 33.5 | 1.7 | .5 | 4.9 | 4.8 | 9.2 | 10.6 | 24.6 | 5.7 | 3.2 | 1.3 |
| | ECONOMICS | 100.2 | 39.3 | 1.2 | 2.9 | 5.0 | .7 | 4.5 | 5.7 | 29.1 | 8.6 | 1.6 | 1.6 |
| | POLITICAL SCIENCE | 99.9 | 33.7 | | .3 | 1.3 | 4.0 | 5.0 | 15.3 | 30.3 | 7.7 | 2.3 | |
| | HIST., GEOGRAPHY | 99.9 | 33.3 | .5 | | 1.2 | 3.1 | 9.4 | 5.8 | 34.8 | 4.9 | 3.8 | 3.1 |
| | M-P-E FIELDS | 99.9 | 48.0 | .3 | 4.7 | 2.4 | 3.1 | 3.6 | 7.4 | 25.0 | 3.1 | 1.4 | .9 |
| | MATHEMATICS | 99.9 | 47.1 | .6 | 4.8 | 1.6 | .6 | 3.2 | 8.7 | 26.0 | 4.7 | 1.0 | 1.6 |
| | PHYSICAL SCIENCES | 100.1 | 49.6 | .3 | 5.1 | 2.6 | 2.3 | 3.9 | 7.8 | 23.0 | 2.9 | 1.8 | .8 |
| | PHYSICS | 100.0 | 53.1 | .5 | 3.5 | 2.6 | .2 | 2.3 | 8.6 | 23.2 | 3.1 | 1.4 | 1.5 |
| | CHEMISTRY | 100.0 | 51.4 | | 9.0 | 2.7 | 2.3 | 6.4 | 4.7 | 19.4 | 2.1 | 1.5 | .5 |
| | GEOLOGY | 100.0 | 40.0 | .5 | | 2.4 | 5.8 | 1.3 | 12.6 | 30.0 | 4.2 | 3.2 | |
| | ENGINEERING | 99.9 | 42.8 | | 2.8 | 2.6 | 9.8 | 2.8 | 4.3 | 31.7 | 2.0 | .4 | .7 |
| | ALL OTHER FIELDS | 100.1 | 24.9 | .3 | .6 | 1.7 | 3.2 | 5.7 | 7.1 | 39.6 | 8.7 | 2.4 | 5.9 |
| | LANG. & LIT. | 100.0 | 39.7 | .3 | .6 | .5 | .9 | 4.8 | 10.0 | 22.7 | 7.7 | 2.2 | 10.6 |
| | ARTS, HUMANITIES | 100.1 | 26.0 | .7 | | 3.6 | 4.8 | 7.4 | 10.0 | 32.4 | 4.5 | 2.4 | 8.3 |
| | PROFESSIONS | 100.1 | 27.0 | | .6 | 1.3 | 3.8 | 2.5 | 8.3 | 46.8 | 5.3 | 2.6 | 1.9 |
| | EDUCATION | 100.2 | 8.2 | .2 | 1.1 | 2.0 | 3.9 | 8.2 | 1.4 | 54.7 | 15.2 | 2.3 | 3.0 |
| COHORT 1950 | TOTAL, ALL FIELDS | 99.9 | 26.9 | 23.8 | 5.7 | 2.2 | 3.4 | 6.8 | 4.6 | 16.6 | 6.9 | 1.3 | 1.7 |
| | BIO-SCIENCES, TOTAL | 100.0 | 30.6 | 25.6 | 6.2 | 4.1 | 4.2 | 6.3 | 4.1 | 11.9 | 5.5 | 1.1 | .4 |
| | BASIC MED. SCIENCES | 100.1 | 28.7 | 25.7 | 8.2 | 5.5 | 4.2 | 6.2 | 3.7 | 12.3 | 4.3 | .9 | .4 |
| | PHYSIOLOGY | 100.0 | 26.5 | 16.0 | 17.2 | 3.3 | 5.1 | 9.1 | 3.7 | 13.7 | 4.2 | 1.2 | |
| | PHARMACOLOGY | 100.0 | 24.8 | 22.4 | 7.6 | 19.3 | 2.4 | 2.1 | .7 | 16.6 | .7 | | 3.4 |
| | BIOCHEMISTRY | 99.8 | 27.0 | 26.3 | 8.9 | 3.7 | 6.5 | 5.1 | 5.8 | 9.6 | 5.7 | 1.2 | |
| | MICROBIOLOGY | 99.9 | 33.0 | 31.6 | 2.8 | 3.5 | 1.8 | 7.2 | 2.5 | 12.8 | 4.1 | .6 | |
| | OTHER BIO-SCIENCES | 100.1 | 33.3 | 25.3 | 3.4 | 2.1 | 4.3 | 6.6 | 4.7 | 11.4 | 7.2 | 1.4 | .4 |
| | BOTANY | 99.9 | 35.9 | 23.9 | 2.7 | | 3.8 | 7.9 | 3.1 | 14.1 | 7.7 | .8 | |
| | GENETICS | 100.0 | 27.1 | 22.9 | .7 | 9.3 | 7.1 | 5.0 | 2.1 | 10.0 | 8.6 | 2.9 | 4.3 |
| | ZOOLOGY | 99.8 | 32.1 | 26.9 | 4.5 | 2.6 | 4.2 | 5.7 | 6.4 | 9.4 | 6.5 | 1.5 | |
| | MISC. BIOLOGY | | | | | | | | | | | | |
| | MEDICAL SCIENCES | 100.0 | 22.4 | 7.6 | 15.6 | 9.7 | 4.4 | 5.9 | 8.5 | 18.8 | 4.7 | 2.4 | |
| | AGRIC. SCIENCES | 99.9 | 34.4 | 25.5 | 2.4 | 2.0 | 6.4 | 8.4 | 1.4 | 8.4 | 7.8 | .8 | 2.4 |
| | PSYCHOLOGY | 99.9 | 21.3 | 27.1 | 18.6 | 1.5 | .7 | 8.8 | 3.2 | 14.4 | 2.7 | 1.6 | |
| | SOCIAL SCIENCES | 100.0 | 23.3 | 27.7 | .8 | 1.5 | 1.3 | 8.4 | 4.3 | 19.6 | 9.2 | 1.6 | 2.3 |
| | SOCIOLOGY | 100.1 | 26.8 | 23.0 | .4 | 3.0 | .4 | 10.7 | 4.6 | 18.6 | 8.2 | .9 | 3.5 |
| | ECONOMICS | 100.0 | 25.8 | 21.9 | .8 | 3.6 | .9 | 7.0 | 4.0 | 21.9 | 7.5 | 2.8 | 3.8 |
| | POLITICAL SCIENCE | 100.2 | 18.8 | 36.5 | 1.1 | | .7 | 9.2 | 4.9 | 18.9 | 6.0 | 1.3 | 2.8 |
| | HIST., GEOGRAPHY | 100.0 | 23.2 | 26.9 | .8 | .4 | 2.7 | 6.8 | 3.9 | 19.3 | 14.2 | 1.6 | |
| | M-P-E FIELDS | 100.0 | 30.8 | 21.7 | 8.4 | .7 | 4.8 | 5.6 | 4.9 | 14.6 | 6.4 | 1.2 | .9 |
| | MATHEMATICS | 100.0 | 34.2 | 24.6 | 5.1 | .3 | .4 | 3.6 | 7.2 | 15.7 | 6.0 | .7 | 2.2 |
| | PHYSICAL SCIENCES | 99.8 | 30.9 | 22.1 | 8.1 | .8 | 4.9 | 6.6 | 4.7 | 12.5 | 6.8 | 1.7 | .7 |
| | PHYSICS | 100.0 | 32.8 | 19.9 | 15.3 | .5 | 2.6 | 5.7 | 5.9 | 8.3 | 6.4 | 1.7 | .9 |
| | CHEMISTRY | 99.9 | 30.9 | 26.5 | 5.2 | 1.2 | 9.2 | 7.1 | 4.4 | 7.5 | 6.1 | 1.3 | .5 |
| | GEOLOGY | 100.1 | 29.3 | 20.7 | 4.2 | .9 | 3.7 | 7.1 | 3.8 | 19.9 | 7.8 | 1.9 | .8 |
| | ENGINEERING | 100.1 | 28.2 | 18.5 | 11.5 | .8 | 7.7 | 4.1 | 3.8 | 19.7 | 5.3 | .2 | .3 |
| | ALL OTHER FIELDS | 100.0 | 17.9 | 20.8 | .7 | 1.5 | 1.8 | 6.5 | 6.6 | 28.0 | 9.3 | 1.7 | 5.2 |
| | LANG. & LIT. | 100.0 | 28.8 | 23.0 | 1.1 | 2.3 | .3 | 6.3 | 7.9 | 20.1 | 8.1 | .7 | 1.4 |
| | ARTS, HUMANITIES | 100.0 | 20.0 | 21.7 | | 2.0 | .6 | 7.3 | 8.9 | 20.9 | 8.5 | 1.2 | 8.9 |
| | PROFESSIONS | 100.1 | 13.6 | 13.6 | 1.7 | 1.5 | 6.8 | 6.6 | 8.5 | 26.1 | 7.8 | 4.1 | 9.8 |
| | EDUCATION | 99.9 | 7.9 | 23.9 | | | .4 | 5.7 | 1.3 | 45.2 | 12.8 | 1.2 | 1.5 |

Appendix 8, continued

## SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

| COHORT | FIELD | TOTAL | UNIV | V.A. | OTHR GOVT | PRIV FDN. | OTHR FSHP | HUSB WIFE | FA., MO | OWN EARN | SAV-INGS | BOR-ROW | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 99.8 | 29.7 | 13.8 | 8.3 | 2.9 | 3.1 | 11.3 | 5.5 | 17.8 | 4.6 | 1.6 | 1.2 |
| | BIO-SCIENCES, TOTAL | 100.1 | 34.2 | 11.1 | 10.6 | 3.9 | 3.4 | 12.5 | 5.1 | 14.6 | 2.9 | 1.1 | .7 |
| | BASIC MED. SCIENCES | 100.1 | 31.5 | 10.8 | 11.9 | 4.0 | 3.9 | 12.8 | 5.3 | 14.9 | 3.2 | 1.0 | .8 |
| | PHYSIOLOGY | 100.2 | 31.9 | 11.0 | 8.6 | 3.3 | 3.3 | 14.3 | 7.3 | 16.1 | 2.8 | 1.2 | .4 |
| | PHARMACOLOGY | 99.9 | 26.6 | 7.7 | 8.0 | 5.4 | 7.1 | 11.4 | 6.0 | 18.6 | 6.0 | 3.1 | |
| | BIOCHEMISTRY | 99.9 | 31.2 | 8.7 | 16.9 | 4.4 | 4.4 | 14.2 | 5.6 | 9.7 | 2.8 | .6 | 1.4 |
| | MICROBIOLOGY | 100.2 | 32.9 | 13.9 | 10.8 | 3.8 | 3.2 | 10.1 | 2.8 | 18.3 | 3.1 | .7 | .6 |
| | OTHER BIO-SCIENCES | 100.1 | 38.9 | 11.5 | 8.2 | 3.7 | 2.5 | 12.1 | 4.7 | 14.2 | 2.5 | 1.2 | .6 |
| | BOTANY | 100.1 | 43.7 | 11.0 | 6.2 | 4.9 | 2.8 | 12.3 | 5.2 | 11.7 | 1.7 | .6 | |
| | GENETICS | 100.1 | 36.2 | 14.8 | 11.0 | | 8.6 | 10.0 | 1.4 | 10.0 | 1.0 | | 7.1 |
| | ZOOLOGY | 100.1 | 35.9 | 12.8 | 6.1 | 2.9 | 1.6 | 12.3 | 5.3 | 17.7 | 3.6 | 1.9 | |
| | MISC. BIOLOGY | 100.0 | 35.6 | 7.5 | 17.8 | 5.0 | .3 | 11.9 | 3.4 | 14.1 | 2.8 | 1.6 | |
| | MEDICAL SCIENCES | 100.0 | 29.8 | 4.8 | 5.4 | 7.9 | 5.9 | 9.7 | 7.9 | 15.4 | 10.5 | 2.7 | |
| | AGRIC. SCIENCES | 100.0 | 35.7 | 15.2 | 5.3 | 3.8 | 3.9 | 11.1 | 3.2 | 12.7 | 6.0 | 2.0 | 1.1 |
| | PSYCHOLOGY | 99.9 | 21.4 | 16.7 | 11.8 | 1.6 | .1 | 14.9 | 6.0 | 21.6 | 4.4 | 1.4 | |
| | SOCIAL SCIENCES | 100.0 | 25.3 | 20.2 | 2.4 | 2.5 | 1.4 | 11.5 | 6.4 | 20.1 | 6.7 | 2.0 | 1.5 |
| | SOCIOLOGY | 100.1 | 24.7 | 19.6 | 3.7 | 3.2 | | 12.2 | 5.9 | 22.1 | 4.0 | 2.1 | 2.6 |
| | ECONOMICS | 100.0 | 29.4 | 22.0 | 2.9 | 2.7 | 3.1 | 9.4 | 6.3 | 16.3 | 5.4 | 1.3 | 1.2 |
| | POLITICAL SCIENCE | 100.0 | 25.6 | 21.1 | 1.2 | 3.3 | .4 | 12.1 | 7.2 | 18.3 | 8.7 | 2.1 | |
| | HIST., GEOGRAPHY | 100.0 | 21.1 | 17.9 | 1.6 | .7 | 2.1 | 12.6 | 6.2 | 24.1 | 8.9 | 2.5 | 2.3 |
| | M-P-E FIELDS | 99.9 | 32.7 | 10.4 | 14.0 | 2.0 | 4.8 | 9.8 | 5.0 | 15.6 | 3.6 | 1.3 | .7 |
| | MATHEMATICS | 99.9 | 33.6 | 12.3 | 10.9 | .8 | 1.6 | 8.8 | 6.8 | 19.1 | 4.7 | 1.3 | |
| | PHYSICAL SCIENCES | 99.9 | 31.6 | 10.6 | 16.4 | 2.1 | 5.0 | 10.7 | 5.2 | 12.6 | 3.1 | 1.4 | 1.2 |
| | PHYSICS | 99.9 | 32.9 | 11.4 | 17.7 | .9 | 3.3 | 11.3 | 5.2 | 13.9 | 1.7 | .6 | 1.0 |
| | CHEMISTRY | 100.0 | 35.5 | 3.6 | 20.5 | 4.4 | 5.1 | 10.0 | 5.3 | 7.9 | 3.8 | 2.2 | 1.7 |
| | GEOLOGY | 100.0 | 26.1 | 17.6 | 10.6 | .8 | 6.5 | 10.8 | 5.2 | 16.5 | 3.7 | 1.4 | .8 |
| | ENGINEERING | 99.8 | 34.3 | 7.4 | 11.4 | 3.1 | 7.8 | 8.8 | 2.6 | 19.5 | 3.6 | 1.0 | .3 |
| | ALL OTHER FIELDS | 100.0 | 18.1 | 19.3 | 2.0 | 1.1 | 1.7 | 9.9 | 6.5 | 29.2 | 6.3 | 2.3 | 3.6 |
| | LANG. & LIT. | 100.1 | 16.9 | 20.3 | 2.8 | .2 | 1.5 | 10.5 | 7.5 | 26.4 | 5.6 | 1.5 | 6.9 |
| | ARTS, HUMANITIES | 100.2 | 26.1 | 18.9 | 1.5 | .7 | 2.0 | 10.5 | 8.5 | 21.5 | 5.6 | 1.5 | 3.4 |
| | PROFESSIONS | 100.1 | 17.6 | 11.1 | 1.7 | 3.7 | 3.1 | 9.6 | 9.3 | 34.3 | 3.9 | 1.7 | 4.1 |
| | EDUCATION | 100.0 | 12.7 | 25.3 | 1.9 | .4 | .7 | 9.0 | 1.6 | 34.4 | 9.3 | 4.3 | .4 |
| COHORT 1960 | TOTAL, ALL FIELDS | 100.1 | 32.7 | 9.2 | 11.1 | 4.4 | 3.1 | 10.3 | 4.0 | 18.4 | 3.7 | 1.6 | 1.6 |
| | BIO-SCIENCES, TOTAL | 100.1 | 35.4 | 7.5 | 16.2 | 4.8 | 3.2 | 10.3 | 2.8 | 14.8 | 2.5 | 1.4 | 1.2 |
| | BASIC MED. SCIENCES | 100.1 | 32.2 | 7.2 | 18.2 | 5.6 | 3.1 | 10.3 | 2.5 | 16.1 | 2.2 | 1.5 | 1.2 |
| | PHYSIOLOGY | 100.1 | 28.8 | 7.1 | 17.6 | 3.7 | 3.6 | 10.8 | 2.5 | 20.4 | 2.9 | 1.4 | 1.3 |
| | PHARMACOLOGY | 100.1 | 33.0 | 10.7 | 9.0 | 10.3 | 3.0 | 8.7 | .7 | 22.0 | 1.7 | 1.0 | |
| | BIOCHEMISTRY | 99.9 | 36.4 | 7.1 | 17.7 | 6.7 | 3.6 | 10.4 | 2.3 | 12.2 | 1.7 | 1.6 | .2 |
| | MICROBIOLOGY | 100.0 | 29.0 | 6.5 | 22.0 | 4.6 | 1.6 | 10.2 | 3.0 | 16.3 | 2.4 | 1.6 | 2.8 |
| | OTHER BIO-SCIENCES | 99.9 | 40.1 | 7.9 | 13.1 | 3.6 | 3.4 | 10.2 | 3.3 | 12.8 | 3.0 | 1.3 | 1.2 |
| | BOTANY | 100.1 | 54.1 | 7.3 | 6.2 | 3.3 | 5.1 | 8.9 | 1.7 | 9.4 | .9 | 2.1 | 1.1 |
| | GENETICS | 100.0 | 43.0 | 7.6 | 16.3 | 1.1 | 3.7 | 8.3 | 3.1 | 9.3 | 6.7 | .9 | |
| | ZOOLOGY | 100.2 | 35.3 | 10.0 | 13.3 | 4.7 | 2.1 | 12.1 | 3.2 | 14.6 | 2.5 | .8 | 1.6 |
| | MISC. BIOLOGY | 100.1 | 30.9 | 6.3 | 17.5 | 4.3 | 3.2 | 10.6 | 5.0 | 16.0 | 3.3 | 1.4 | 1.6 |
| | MEDICAL SCIENCES | 100.0 | 21.7 | 1.7 | 25.6 | 10.0 | 5.0 | 7.9 | 3.1 | 17.3 | 6.2 | 1.5 | |
| | AGRIC. SCIENCES | 100.1 | 47.2 | 12.2 | 2.8 | 6.3 | 3.8 | 10.0 | 2.4 | 11.2 | 3.2 | 1.0 | |
| | PSYCHOLOGY | 99.9 | 23.7 | 8.7 | 20.5 | 3.9 | 1.5 | 12.3 | 2.8 | 20.4 | 4.4 | 1.6 | .1 |
| | SOCIAL SCIENCES | 100.0 | 29.5 | 12.0 | 1.7 | 5.4 | 1.9 | 10.6 | 6.8 | 23.5 | 4.6 | 2.0 | 2.0 |
| | SOCIOLOGY | 100.1 | 32.9 | 11.4 | 2.9 | 4.5 | 3.0 | 10.6 | 7.7 | 21.6 | 1.6 | 1.6 | 2.1 |
| | ECONOMICS | 100.0 | 31.2 | 12.8 | .9 | 7.8 | 1.2 | 7.3 | 8.5 | 20.9 | 5.0 | 2.0 | 2.4 |
| | POLITICAL SCIENCE | 100.2 | 24.0 | 13.9 | 2.3 | 5.3 | 2.8 | 11.6 | 3.9 | 28.2 | 4.8 | 2.2 | 1.2 |
| | HIST., GEOGRAPHY | 100.1 | 29.4 | 10.2 | .7 | 4.4 | .7 | 12.7 | 6.8 | 23.8 | 7.2 | 2.3 | 1.9 |
| | M-P-E FIELDS | 100.0 | 38.0 | 8.0 | 15.8 | 2.6 | 5.3 | 9.2 | 3.5 | 13.5 | 2.0 | 1.3 | .8 |
| | MATHEMATICS | 99.9 | 42.1 | 9.5 | 14.7 | 1.4 | 1.9 | 6.7 | 2.7 | 16.0 | 1.9 | .8 | 2.2 |
| | PHYSICAL SCIENCES | 100.0 | 36.3 | 7.4 | 16.2 | 3.0 | 6.7 | 10.2 | 3.8 | 12.6 | 2.1 | 1.4 | .3 |
| | PHYSICS | 100.0 | 35.4 | 4.2 | 21.7 | 1.6 | 5.9 | 7.1 | 5.8 | 16.1 | 1.0 | 1.2 | |
| | CHEMISTRY | 100.2 | 39.7 | 8.0 | 17.0 | 6.4 | 6.9 | 10.8 | 1.5 | 6.5 | 1.9 | 1.5 | |
| | GEOLOGY | 100.0 | 33.5 | 9.6 | 10.6 | .5 | 7.1 | 12.1 | 4.8 | 16.3 | 3.1 | 1.6 | .8 |
| | ENGINEERING | | | | | | | | | | | | |
| | ALL OTHER FIELDS | 100.0 | 24.5 | 11.8 | 2.6 | 2.8 | 2.0 | 10.7 | 5.5 | 27.5 | 6.6 | 2.2 | 3.8 |
| | LANG. & LIT. | 99.9 | 31.6 | 15.2 | 1.6 | 1.9 | .6 | 11.5 | 7.7 | 18.1 | 5.1 | 3.4 | 3.2 |
| | ARTS, HUMANITIES | 99.9 | 26.4 | 10.4 | 3.1 | 1.8 | 3.0 | 15.7 | 6.6 | 21.3 | 7.1 | 1.3 | 3.2 |
| | PROFESSIONS | 99.9 | 23.4 | 7.7 | 2.7 | 4.6 | 3.0 | 9.1 | 5.6 | 32.2 | 4.9 | 1.0 | 5.7 |
| | EDUCATION | 100.0 | 16.1 | 14.1 | 3.2 | 2.3 | 1.5 | 7.2 | 2.0 | 38.4 | 9.6 | 2.9 | 2.7 |

## Appendix 9

## SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | GRAND TOTAL | WITH FSHP | PHS | NSF | DOD | OTHR FED. | IND, BUS. | PRIV FDN. | HLTH AGCY | UNIV | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10016 | 1626 | 293 | 150 | 38 | 168 | 73 | 375 | 46 | 419 | 64 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1354 | 201 | 4 | 2 | 1 | 10 | 12 | 61 | 5 | 101 | 5 |
| | BIO-SCIENCES, TOTAL | 351 | 68 | 3 | 1 | | 2 | 5 | 22 | 4 | 31 | |
| | BASIC MED. SCIENCES | 180 | 34 | 2 | | | | 4 | 10 | 3 | 15 | |
| | PHYSIOLOGY | 79 | 13 | | | | | 1 | 5 | 1 | 6 | |
| | PHARMACOLOGY | 15 | 1 | | | | | | | | 1 | |
| | BIOCHEMISTRY | 35 | 10 | 1 | | | | 2 | 3 | 1 | 3 | |
| | MICROBIOLOGY | 51 | 10 | 1 | | | | 1 | 2 | 1 | 5 | |
| | OTHER BIO-SCIENCES | 171 | 34 | 1 | 1 | | 2 | 1 | 12 | 1 | 16 | |
| | BOTANY | 59 | 8 | | | | 1 | | 2 | | 5 | |
| | GENETICS | 19 | 5 | | | | | | 3 | | 2 | |
| | ZOOLOGY | 63 | 14 | 1 | 1 | | 1 | 1 | 4 | 1 | 5 | |
| | MISC. BIOLOGY | 30 | 7 | | | | | | 3 | | 4 | |
| | MEDICAL SCIENCES | 39 | 5 | 1 | | | | | 2 | | 2 | |
| | AGRIC. SCIENCES | 77 | 6 | | | | | 1 | | | 5 | |
| | PSYCHOLOGY | 61 | 10 | | | | 1 | | 2 | | 7 | |
| | SOCIAL SCIENCES | 254 | 39 | | | 1 | 2 | 1 | 8 | 1 | 24 | 2 |
| | SOCIOLOGY | 78 | 19 | | | | | | 1 | | 17 | 1 |
| | ECONOMICS | 56 | 4 | | | | 1 | | 2 | | 1 | |
| | POLITICAL SCIENCE | 61 | 7 | | | 1 | | 1 | 1 | 1 | 2 | 1 |
| | HIST., GEOGRAPHY | 59 | 9 | | | | 1 | | 4 | | 4 | |
| | M-P-E FIELDS | 346 | 41 | | 1 | | 1 | 5 | 11 | | 22 | 1 |
| | MATHEMATICS | 69 | 13 | | 1 | | 1 | 1 | 2 | | 8 | |
| | PHYSICAL SCIENCES | 206 | 25 | | | | | 3 | 7 | | 14 | 1 |
| | PHYSICS | 71 | 13 | | | | | 1 | 3 | | 8 | 1 |
| | CHEMISTRY | 76 | 8 | | | | | 2 | 1 | | 5 | |
| | GEOLOGY | 59 | 4 | | | | | | 3 | | 1 | |
| | ENGINEERING | 71 | 3 | | | | | 1 | 2 | | | |
| | ALL OTHER FIELDS | 226 | 32 | | | | 4 | | 16 | | 10 | 2 |
| | LANG. & LIT. | 77 | 13 | | | | 3 | | 5 | | 5 | |
| | ARTS, HUMANITIES | 60 | 14 | | | | | | 8 | | 4 | 2 |
| | PROFESSIONS | 48 | 4 | | | | 1 | | 2 | | 1 | |
| | EDUCATION | 41 | 1 | | | | | | 1 | | | |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 218 | 5 | 9 | 3 | 27 | 24 | 64 | 2 | 79 | 5 |
| | BIO-SCIENCES, TOTAL | 570 | 99 | 4 | 5 | 1 | 5 | 12 | 29 | 2 | 38 | 3 |
| | BASIC MED. SCIENCES | 378 | 76 | 1 | 1 | 1 | 4 | 12 | 24 | 2 | 29 | 2 |
| | PHYSIOLOGY | 112 | 21 | | | 1 | 4 | 1 | 6 | 1 | 8 | |
| | PHARMACOLOGY | 25 | 9 | | | | | 2 | 1 | | 6 | |
| | BIOCHEMISTRY | 155 | 33 | 1 | 1 | | | 8 | 12 | 1 | 8 | 2 |
| | MICROBIOLOGY | 86 | 13 | | | | | 1 | 5 | | 7 | |
| | OTHER BIO-SCIENCES | 192 | 23 | 3 | 4 | | 1 | | 5 | | 9 | 1 |
| | BOTANY | 69 | 5 | | 2 | | | | | | 3 | |
| | GENETICS | 32 | 4 | | | | | | 2 | | 1 | 1 |
| | ZOOLOGY | 90 | 13 | 3 | 2 | | 1 | | 3 | | 4 | |
| | MISC. BIOLOGY | 1 | 1 | | | | | | | | 1 | |
| | MEDICAL SCIENCES | 31 | 1 | | | | | | 1 | | | |
| | AGRIC. SCIENCES | 74 | 3 | | | | 1 | 2 | | | | |
| | PSYCHOLOGY | 83 | 6 | | | | 1 | | 2 | | 3 | |
| | SOCIAL SCIENCES | 252 | 38 | | | 1 | 8 | 3 | 10 | | 16 | |
| | SOCIOLOGY | 65 | 10 | | | | 1 | | 3 | | 6 | |
| | ECONOMICS | 80 | 11 | | | 1 | 3 | 1 | 4 | | 2 | |
| | POLITICAL SCIENCE | 49 | 6 | | | | 1 | 1 | 1 | | 3 | |
| | HIST., GEOGRAPHY | 58 | 11 | | | | 3 | 1 | 2 | | 5 | |
| | M-P-E FIELDS | 367 | 37 | 1 | 4 | 1 | 5 | 7 | 9 | | 10 | |
| | MATHEMATICS | 62 | 11 | | 3 | 1 | 2 | | 2 | | 3 | |
| | PHYSICAL SCIENCES | 238 | 25 | 1 | 1 | | 3 | 6 | 7 | | 7 | |
| | PHYSICS | 69 | 8 | 1 | | | 1 | 1 | 5 | | | |
| | CHEMISTRY | 92 | 11 | | | | 1 | 4 | 1 | | 5 | |
| | GEOLOGY | 77 | 6 | | 1 | | 1 | 1 | 1 | | 2 | |
| | ENGINEERING | 67 | 1 | | | | | 1 | | | | |
| | ALL OTHER FIELDS | 233 | 34 | | | | 7 | | 13 | | 12 | 2 |
| | LANG. & LIT. | 76 | 12 | | | | 2 | | 4 | | 5 | 1 |
| | ARTS, HUMANITIES | 62 | 20 | | | | 5 | | 9 | | 6 | |
| | PROFESSIONS | 43 | 1 | | | | | | | | 1 | |
| | EDUCATION | 52 | 1 | | | | | | | | | 1 |

Appendix 9, continued

## SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | GRAND TOTAL | WITH FSHP | PHS | NSF | DOD | OTHR FED. | IND, BUS. | PRIV FDN. | HLTH AGCY | UNIV | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 221 | 20 | 12 | 5 | 22 | 11 | 77 | 4 | 60 | 10 |
| | BIO-SCIENCES, TOTAL | 328 | 66 | 16 | 4 | | 2 | 5 | 15 | 3 | 17 | 4 |
| | BASIC MED. SCIENCES | 156 | 30 | 6 | | | 1 | 4 | 9 | 2 | 6 | 2 |
| | PHYSIOLOGY | 36 | 6 | 1 | | | 1 | 1 | 2 | | 1 | |
| | PHARMACOLOGY | 18 | 2 | | | | | 1 | 1 | | | |
| | BIOCHEMISTRY | 64 | 14 | 4 | | | | 1 | 5 | | 3 | 1 |
| | MICROBIOLOGY | 38 | 8 | 1 | | | | 1 | 1 | 2 | 2 | 1 |
| | OTHER BIO-SCIENCES | 172 | 36 | 10 | 4 | | 1 | 1 | 6 | 1 | 11 | 2 |
| | BOTANY | 69 | 16 | 1 | 2 | | 1 | 1 | 4 | | 5 | 2 |
| | GENETICS | 13 | 4 | | 1 | | | | | | 3 | |
| | ZOOLOGY | 89 | 16 | 9 | 1 | | | | 2 | 1 | 3 | |
| | MISC. BIOLOGY | 1 | | | | | | | | | | |
| | MEDICAL SCIENCES | 26 | 3 | 1 | | | | | | | 2 | |
| | AGRIC. SCIENCES | 65 | 6 | | | | 1 | | 3 | | 2 | |
| | PSYCHOLOGY | 76 | 11 | 3 | | | | | 6 | | 2 | |
| | SOCIAL SCIENCES | 257 | 46 | | | | 7 | 1 | 22 | | 13 | 3 |
| | SOCIOLOGY | 64 | 14 | | | | 4 | 1 | 6 | | 3 | |
| | ECONOMICS | 80 | 11 | | | | 1 | | 4 | | 3 | 3 |
| | POLITICAL SCIENCE | 32 | 7 | | | | | | 4 | | 3 | |
| | HIST., GEOGRAPHY | 81 | 14 | | | | 2 | | 8 | | 4 | |
| | M-P-E FIELDS | 296 | 55 | | 8 | 5 | 7 | 4 | 14 | 1 | 15 | 1 |
| | MATHEMATICS | 63 | 18 | | 3 | 1 | 2 | | 3 | | 9 | |
| | PHYSICAL SCIENCES | 185 | 33 | | 3 | 4 | 4 | 4 | 10 | 1 | 6 | 1 |
| | PHYSICS | 67 | 12 | | | 3 | 1 | | 5 | 1 | 1 | 1 |
| | CHEMISTRY | 78 | 17 | | 1 | 1 | 3 | 4 | 5 | | 3 | |
| | GEOLOGY | 40 | 4 | | 2 | | | | | | 2 | |
| | ENGINEERING | 48 | 4 | | 2 | | 1 | | 1 | | | |
| | ALL OTHER FIELDS | 241 | 34 | | | | 5 | 1 | 17 | | 9 | 2 |
| | LANG. & LIT. | 67 | 12 | | | | 3 | | 5 | | 4 | |
| | ARTS, HUMANITIES | 46 | 11 | | | | 1 | 1 | 9 | | | |
| | PROFESSIONS | 56 | 10 | | | | 1 | | 3 | | 4 | 2 |
| | EDUCATION | 72 | 1 | | | | | | | | 1 | |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 277 | 27 | 27 | 8 | 45 | 8 | 74 | 8 | 72 | 8 |
| | BIO-SCIENCES, TOTAL | 418 | 81 | 17 | 13 | | 4 | 5 | 15 | 7 | 15 | 5 |
| | BASIC MED. SCIENCES | 246 | 45 | 12 | 5 | | 3 | 4 | 9 | 6 | 4 | 2 |
| | PHYSIOLOGY | 43 | 11 | 4 | 3 | | | | 2 | | 2 | |
| | PHARMACOLOGY | 29 | 4 | | | | | 1 | 2 | 1 | | |
| | BIOCHEMISTRY | 90 | 18 | 4 | 1 | | 1 | 2 | 3 | 4 | 1 | 2 |
| | MICROBIOLOGY | 84 | 12 | 4 | 1 | | 2 | 1 | 2 | 1 | 1 | |
| | OTHER BIO-SCIENCES | 172 | 36 | 5 | 8 | | 1 | 1 | 6 | 1 | 11 | 3 |
| | BOTANY | 71 | 12 | 1 | 3 | | | | 1 | | 5 | 2 |
| | GENETICS | 14 | 2 | | 1 | | | | 1 | | | |
| | ZOOLOGY | 87 | 22 | 4 | 4 | | 1 | 1 | 4 | 1 | 6 | 1 |
| | MISC. BIOLOGY | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 5 | 2 | | 1 | | | | | 2 | |
| | AGRIC. SCIENCES | 103 | 7 | | 1 | | 1 | 1 | | | 3 | 1 |
| | PSYCHOLOGY | 95 | 9 | 2 | 1 | | 2 | | 1 | 1 | 2 | |
| | SOCIAL SCIENCES | 267 | 65 | 1 | | 1 | 13 | 1 | 28 | | 21 | |
| | SOCIOLOGY | 61 | 13 | | | | 5 | | 4 | | 4 | |
| | ECONOMICS | 54 | 10 | | | | 1 | 1 | 2 | | 6 | |
| | POLITICAL SCIENCE | 75 | 18 | 1 | | | 5 | | 9 | | 3 | |
| | HIST., GEOGRAPHY | 77 | 24 | | | 1 | 2 | | 13 | | 8 | |
| | M-P-E FIELDS | 435 | 60 | 4 | 12 | 6 | 10 | 1 | 9 | | 17 | 1 |
| | MATHEMATICS | 68 | 16 | | 5 | 2 | 2 | | 2 | | 5 | |
| | PHYSICAL SCIENCES | 271 | 37 | 3 | 5 | 3 | 6 | | 7 | | 12 | 1 |
| | PHYSICS | 90 | 14 | 1 | 2 | 1 | 2 | | 4 | | 3 | 1 |
| | CHEMISTRY | 77 | 9 | 2 | 1 | 1 | 1 | | 1 | | 3 | |
| | GEOLOGY | 104 | 14 | | 2 | 1 | 3 | | 2 | | 6 | |
| | ENGINEERING | 96 | 7 | 1 | 2 | 1 | 2 | 1 | | | | |
| | ALL OTHER FIELDS | 272 | 50 | 1 | | | 15 | | 21 | | 12 | 1 |
| | LANG. & LIT. | 74 | 23 | | | | 9 | | 12 | | 2 | |
| | ARTS, HUMANITIES | 69 | 15 | 1 | | | 4 | | 7 | | 3 | |
| | PROFESSIONS | 61 | 8 | | | | | | 1 | | 6 | 1 |
| | EDUCATION | 68 | 4 | | | | 2 | | 1 | | 1 | |

Appendix 9, continued

## SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | GRAND TOTAL | WITH FSHP | PHS | NSF | DOD | OTHR FED. | IND, BUS. | PRIV FDN. | HLTH AGCY | UNIV | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 338 | 87 | 43 | 10 | 37 | 7 | 59 | 21 | 57 | 17 |
| | BIO-SCIENCES, TOTAL | 663 | 169 | 75 | 17 | 3 | 12 | 3 | 13 | 20 | 20 | 6 |
| | BASIC MED. SCIENCES | 425 | 115 | 54 | 11 | 2 | 8 | 3 | 9 | 12 | 13 | 3 |
| | PHYSIOLOGY | 123 | 29 | 15 | 4 | | 1 | | 3 | 1 | 4 | 1 |
| | PHARMACOLOGY | 36 | 8 | 6 | | | | | | 1 | 1 | |
| | BIOCHEMISTRY | 139 | 46 | 19 | 5 | | 4 | | 2 | 8 | 6 | 2 |
| | MICROBIOLOGY | 127 | 32 | 14 | 2 | 2 | 3 | 3 | 4 | 2 | 2 | |
| | OTHER BIO-SCIENCES | 238 | 54 | 21 | 6 | 1 | 4 | | 4 | 8 | 7 | 3 |
| | BOTANY | 91 | 13 | 3 | 1 | 1 | 1 | | | 3 | 2 | 2 |
| | GENETICS | 21 | 7 | 3 | 1 | | 1 | | | | 1 | 1 |
| | ZOOLOGY | 93 | 20 | 11 | 1 | | 1 | | 4 | | 3 | |
| | MISC. BIOLOGY | 33 | 14 | 4 | 3 | | 1 | | | 5 | 1 | |
| | MEDICAL SCIENCES | 66 | 6 | 3 | 1 | | | | | | 2 | |
| | AGRIC. SCIENCES | 125 | 11 | 1 | 3 | | 3 | | 3 | | 1 | |
| | PSYCHOLOGY | 73 | 8 | 5 | 1 | | 1 | | | | 1 | |
| | SOCIAL SCIENCES | 318 | 59 | 1 | 2 | | 5 | 1 | 24 | | 20 | 6 |
| | SOCIOLOGY | 84 | 14 | 1 | 2 | | 2 | 1 | 1 | | 5 | 2 |
| | ECONOMICS | 84 | 15 | | | | 2 | | 9 | | 3 | 1 |
| | POLITICAL SCIENCE | 76 | 24 | | | | 1 | | 12 | | 9 | 2 |
| | HIST., GEOGRAPHY | 74 | 6 | | | | | | 2 | | 3 | 1 |
| | M-P-E FIELDS | 405 | 60 | 2 | 17 | 7 | 10 | 3 | 6 | 1 | 10 | 4 |
| | MATHEMATICS | 96 | 17 | | 8 | | 2 | | 3 | | 2 | 2 |
| | PHYSICAL SCIENCES | 222 | 37 | 2 | 7 | 6 | 5 | 3 | 3 | 1 | 8 | 2 |
| | PHYSICS | 70 | 13 | | 2 | 1 | 3 | | 2 | | 3 | 2 |
| | CHEMISTRY | 80 | 17 | 2 | 3 | 5 | 2 | 2 | 1 | 1 | 1 | |
| | GEOLOGY | 72 | 7 | | 2 | | | 1 | | | 4 | |
| | ENGINEERING | 87 | 6 | | 2 | 1 | 3 | | | | | |
| | ALL OTHER FIELDS | 262 | 25 | | 2 | | 6 | | 13 | | 3 | 1 |
| | LANG. & LIT. | 67 | 5 | | | | 3 | | | | 1 | 1 |
| | ARTS, HUMANITIES | 64 | 10 | | 1 | | 2 | | 6 | | 1 | |
| | PROFESSIONS | 56 | 8 | | | | 1 | | 6 | | 1 | |
| | EDUCATION | 75 | 2 | | 1 | | | | 1 | | | |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 371 | 150 | 57 | 11 | 27 | 11 | 40 | 6 | 50 | 19 |
| | BIO-SCIENCES, TOTAL | 835 | 231 | 137 | 32 | 1 | 8 | 5 | 17 | 6 | 16 | 9 |
| | BASIC MED. SCIENCES | 502 | 164 | 102 | 18 | 1 | 6 | 4 | 11 | 4 | 14 | 4 |
| | PHYSIOLOGY | 140 | 44 | 25 | 4 | | 2 | 1 | 2 | 1 | 5 | 4 |
| | PHARMACOLOGY | 30 | 7 | 4 | 1 | | | | 2 | | | |
| | BIOCHEMISTRY | 205 | 79 | 48 | 11 | | 3 | 2 | 6 | 3 | 6 | |
| | MICROBIOLOGY | 127 | 34 | 25 | 2 | 1 | 1 | 1 | 1 | | 3 | |
| | OTHER BIO-SCIENCES | 333 | 67 | 35 | 14 | | 2 | 1 | 6 | 2 | 2 | 5 |
| | BOTANY | 86 | 12 | 4 | 3 | | 2 | 1 | 1 | | | 1 |
| | GENETICS | 56 | 14 | 9 | 1 | | | | 1 | | 1 | 2 |
| | ZOOLOGY | 103 | 18 | 9 | 6 | | | | 2 | | | 1 |
| | MISC. BIOLOGY | 88 | 23 | 13 | 4 | | | | 2 | 2 | 1 | 1 |
| | MEDICAL SCIENCES | 55 | 5 | 4 | | | | | | | 1 | |
| | AGRIC. SCIENCES | 92 | 7 | 1 | | | 2 | 2 | | | 2 | |
| | PSYCHOLOGY | 80 | 10 | 5 | 2 | 1 | 2 | | | | | |
| | SOCIAL SCIENCES | 364 | 51 | 1 | 2 | | 7 | 4 | 16 | | 18 | 3 |
| | SOCIOLOGY | 97 | 9 | 1 | 1 | | 1 | | 3 | | 2 | 1 |
| | ECONOMICS | 82 | 13 | | 1 | | | 4 | 7 | | 1 | |
| | POLITICAL SCIENCE | 85 | 18 | | | | 5 | | 4 | | 9 | |
| | HIST., GEOGRAPHY | 100 | 11 | | | | 1 | | 2 | | 6 | 2 |
| | M-P-E FIELDS | 434 | 50 | 2 | 20 | 9 | 2 | | 1 | | 9 | 7 |
| | MATHEMATICS | 100 | 17 | 1 | 7 | 3 | | | | | 4 | 2 |
| | PHYSICAL SCIENCES | 240 | 33 | 1 | 13 | 6 | 2 | | 1 | | 5 | 5 |
| | PHYSICS | 69 | 10 | | 3 | 2 | 1 | | 1 | | 2 | 1 |
| | CHEMISTRY | 90 | 18 | 1 | 8 | 4 | 1 | | | | 2 | 2 |
| | GEOLOGY | 81 | 5 | | 2 | | | | | | 1 | 2 |
| | ENGINEERING | 94 | | | | | | | | | | |
| | ALL OTHER FIELDS | 364 | 17 | | 1 | | 6 | | 6 | | 4 | |
| | LANG. & LIT. | 96 | 5 | | | | 3 | | 1 | | 1 | |
| | ARTS, HUMANITIES | 78 | 6 | | | | 2 | | 1 | | 3 | |
| | PROFESSIONS | 102 | 5 | | | | 1 | | 4 | | | |
| | EDUCATION | 88 | 1 | | 1 | | | | | | | |

## Appendix 10

## DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | NO. HOLDING FELLOWSHIPS | SUMMER ONLY | ACADEMIC YEAR | CALENDAR YEAR | 1-1.5 YEARS | TWO YEARS | OTHER |
|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 1679 | 168 | 199 | 893 | 52 | 260 | 107 |
| COHORT 1935 | TOTAL, ALL FIELDS | 209 | 16 | 20 | 128 | 6 | 28 | 11 |
| | BIO-SCIENCES, TOTAL | 70 | 5 | 7 | 42 | 1 | 10 | 5 |
| | BASIC MED. SCIENCES | 35 | | 2 | 19 | | 9 | 5 |
| | PHYSIOLOGY | 13 | | 1 | 8 | | 4 | |
| | PHARMACOLOGY | 1 | | | | | | 1 |
| | BIOCHEMISTRY | 11 | | | 4 | | 3 | 4 |
| | MICROBIOLOGY | 10 | | 1 | 7 | | 2 | |
| | OTHER BIO-SCIENCES | 35 | 5 | 5 | 23 | 1 | 1 | |
| | BOTANY | 8 | 2 | 1 | 5 | | | |
| | GENETICS | 5 | | 1 | 4 | | | |
| | ZOOLOGY | 13 | 2 | 2 | 7 | 1 | 1 | |
| | MISC. BIOLOGY | 9 | 1 | 1 | 7 | | | |
| | MEDICAL SCIENCES | 7 | | | 4 | | 2 | 1 |
| | AGRIC. SCIENCES | 6 | | | 6 | | | |
| | PSYCHOLOGY | 11 | | 1 | 9 | | 1 | |
| | SOCIAL SCIENCES | 40 | 4 | 4 | 20 | 3 | 6 | 3 |
| | SOCIOLOGY | 19 | 1 | | 11 | 3 | 2 | 2 |
| | ECONOMICS | 5 | 1 | 1 | 3 | | | |
| | POLITICAL SCIENCE | 7 | 1 | 1 | 4 | | | 1 |
| | HIST., GEOGRAPHY | 9 | 1 | 2 | 2 | | 4 | |
| | M-P-E FIELDS | 44 | | 4 | 28 | 2 | 8 | 2 |
| | MATHEMATICS | 14 | | 2 | 10 | 2 | | |
| | PHYSICAL SCIENCES | 27 | | 2 | 17 | | 6 | 2 |
| | PHYSICS | 15 | | 1 | 9 | | 4 | 1 |
| | CHEMISTRY | 8 | | 1 | 4 | | 2 | 1 |
| | GEOLOGY | 4 | | | 4 | | | |
| | ENGINEERING | 3 | | | 1 | | 2 | |
| | ALL OTHER FIELDS | 31 | 7 | 4 | 19 | | 1 | |
| | LANG. & LIT. | 13 | 3 | | 9 | | 1 | |
| | ARTS, HUMANITIES | 13 | 2 | 4 | 7 | | | |
| | PROFESSIONS | 4 | 2 | | 2 | | | |
| | EDUCATION | 1 | | | 1 | | | |
| COHORT 1940 | TOTAL, ALL FIELDS | 232 | 20 | 33 | 134 | 4 | 26 | 15 |
| | BIO-SCIENCES, TOTAL | 107 | 5 | 9 | 63 | 3 | 19 | 8 |
| | BASIC MED. SCIENCES | 79 | 3 | 5 | 48 | 2 | 14 | 7 |
| | PHYSIOLOGY | 23 | 1 | 2 | 15 | | 4 | 1 |
| | PHARMACOLOGY | 9 | | 1 | 7 | | 1 | |
| | BIOCHEMISTRY | 34 | 1 | 1 | 18 | 2 | 7 | 5 |
| | MICROBIOLOGY | 13 | 1 | 1 | 8 | | 2 | 1 |
| | OTHER BIO-SCIENCES | 28 | 2 | 4 | 15 | 1 | 5 | 1 |
| | BOTANY | 8 | 2 | 2 | 2 | | 2 | |
| | GENETICS | 4 | | | 3 | | | 1 |
| | ZOOLOGY | 15 | | 2 | 9 | 1 | 3 | |
| | MISC. BIOLOGY | 1 | | | 1 | | | |
| | MEDICAL SCIENCES | 1 | | | 1 | | | |
| | AGRIC. SCIENCES | 3 | | 1 | 1 | | 1 | |
| | PSYCHOLOGY | 6 | 1 | 2 | 3 | | | |
| | SOCIAL SCIENCES | 39 | 5 | 10 | 22 | 1 | | 1 |
| | SOCIOLOGY | 11 | 1 | 4 | 5 | | | 1 |
| | ECONOMICS | 11 | 2 | 2 | 7 | | | |
| | POLITICAL SCIENCE | 6 | 1 | 1 | 4 | | | |
| | HIST., GEOGRAPHY | 11 | 1 | 3 | 6 | 1 | | |
| | M-P-E FIELDS | 40 | 3 | 5 | 22 | | 5 | 5 |
| | MATHEMATICS | 12 | 2 | 2 | 7 | | 1 | |
| | PHYSICAL SCIENCES | 27 | 1 | 3 | 14 | | 4 | 5 |
| | PHYSICS | 9 | 1 | 2 | 5 | | 1 | |
| | CHEMISTRY | 12 | | 1 | 4 | | 3 | 4 |
| | GEOLOGY | 6 | | | 5 | | | 1 |
| | ENGINEERING | 1 | | | 1 | | | |
| | ALL OTHER FIELDS | 36 | 6 | 6 | 22 | | 1 | 1 |
| | LANG. & LIT. | 12 | 2 | 2 | 8 | | | |
| | ARTS, HUMANITIES | 21 | 3 | 3 | 14 | | 1 | |
| | PROFESSIONS | 3 | 1 | 1 | | | | 1 |
| | EDUCATION | | | | | | | |

Appendix 10, continued

## DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | NO. HOLDING FELLOWSHIPS | SUMMER ONLY | ACADEMIC CALENDAR YEAR | 1-1.5 YEARS | TWO YEARS | OTHER |
|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 225 | 21 | 25 | 139 | 2 | 21 | 17 |
| | BIO-SCIENCES, TOTAL | 68 | 4 | 8 | 31 | 2 | 11 | 12 |
| | BASIC MED. SCIENCES | 31 | 1 | 1 | 15 | 1 | 9 | 4 |
| | PHYSIOLOGY | 5 | | | 2 | 1 | 1 | 1 |
| | PHARMACOLOGY | 2 | | | | | 1 | 1 |
| | BIOCHEMISTRY | 16 | | 1 | 8 | | 5 | 2 |
| | MICROBIOLOGY | 8 | 1 | | 5 | | 2 | |
| | OTHER BIO-SCIENCES | 37 | 3 | 7 | 16 | 1 | 2 | 8 |
| | BOTANY | 17 | | 4 | 6 | 1 | 1 | 5 |
| | GENETICS | 4 | 1 | 1 | 2 | | | |
| | ZOOLOGY | 16 | 2 | 2 | 8 | | 1 | 3 |
| | MISC. BIOLOGY | | | | | | | |
| | MEDICAL SCIENCES | 3 | 1 | | 1 | | | 1 |
| | AGRIC. SCIENCES | 6 | | | 6 | | | |
| | PSYCHOLOGY | 10 | 2 | | 7 | | 1 | |
| | SOCIAL SCIENCES | 48 | 6 | 6 | 34 | | 2 | |
| | SOCIOLOGY | 15 | 4 | 2 | 9 | | | |
| | ECONOMICS | 12 | 1 | 1 | 9 | | 1 | |
| | POLITICAL SCIENCE | 7 | | 1 | 5 | | 1 | |
| | HIST., GEOGRAPHY | 14 | 1 | 2 | 11 | | | |
| | M-P-E FIELDS | 55 | 3 | 9 | 33 | | 6 | 4 |
| | MATHEMATICS | 18 | | 3 | 10 | | 5 | |
| | PHYSICAL SCIENCES | 33 | 3 | 5 | 20 | | 1 | 4 |
| | PHYSICS | 12 | | 3 | 8 | | | 1 |
| | CHEMISTRY | 17 | 2 | 2 | 9 | | 1 | 3 |
| | GEOLOGY | 4 | 1 | | 3 | | | |
| | ENGINEERING | 4 | | 1 | 3 | | | |
| | ALL OTHER FIELDS | 35 | 5 | 2 | 27 | | 1 | |
| | LANG. & LIT. | 13 | 2 | | 11 | | | |
| | ARTS, HUMANITIES | 10 | 2 | | 7 | | 1 | |
| | PROFESSIONS | 10 | 1 | 2 | 7 | | | |
| | EDUCATION | 2 | | | 2 | | | |
| COHORT 1950 | TOTAL, ALL FIELDS | 284 | 27 | 35 | 178 | 2 | 30 | 12 |
| | BIO-SCIENCES, TOTAL | 89 | 6 | 7 | 56 | | 15 | 5 |
| | BASIC MED. SCIENCES | 51 | | 3 | 34 | | 12 | 2 |
| | PHYSIOLOGY | 11 | | | 10 | | | 1 |
| | PHARMACOLOGY | 5 | | | 3 | | 1 | 1 |
| | BIOCHEMISTRY | 22 | | 1 | 14 | | 7 | |
| | MICROBIOLOGY | 13 | | 2 | 7 | | 4 | |
| | OTHER BIO-SCIENCES | 38 | 6 | 4 | 22 | | 3 | 3 |
| | BOTANY | 12 | 1 | 1 | 8 | | 2 | |
| | GENETICS | 2 | | | 2 | | | |
| | ZOOLOGY | 24 | 5 | 3 | 12 | | 1 | 3 |
| | MISC. BIOLOGY | | | | | | | |
| | MEDICAL SCIENCES | 5 | | 1 | 3 | | 1 | |
| | AGRIC. SCIENCES | 7 | 1 | 3 | 2 | | | 1 |
| | PSYCHOLOGY | 9 | | 1 | 6 | | 1 | 1 |
| | SOCIAL SCIENCES | 63 | 10 | 10 | 38 | | 2 | 3 |
| | SOCIOLOGY | 11 | 1 | 2 | 6 | | 1 | 1 |
| | ECONOMICS | 10 | 2 | 2 | 4 | | | 2 |
| | POLITICAL SCIENCE | 18 | | 2 | 16 | | | |
| | HIST., GEOGRAPHY | 24 | 7 | 4 | 12 | | 1 | |
| | M-P-E FIELDS | 61 | 3 | 8 | 36 | 2 | 10 | 2 |
| | MATHEMATICS | 16 | 1 | 3 | 8 | | 4 | |
| | PHYSICAL SCIENCES | 37 | 2 | 4 | 23 | 2 | 4 | 2 |
| | PHYSICS | 14 | 1 | 2 | 8 | 1 | | 2 |
| | CHEMISTRY | 9 | 1 | | 6 | | 2 | |
| | GEOLOGY | 14 | | 2 | 9 | 1 | 2 | |
| | ENGINEERING | 8 | | 1 | 5 | | 2 | |
| | ALL OTHER FIELDS | 50 | 7 | 5 | 37 | | 1 | |
| | LANG. & LIT. | 23 | 2 | 1 | 19 | | 1 | |
| | ARTS, HUMANITIES | 15 | | 3 | 12 | | | |
| | PROFESSIONS | 8 | 2 | 1 | 5 | | | |
| | EDUCATION | 4 | 3 | | 1 | | | |

Appendix 10, continued

## DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

| COHORT | FIELD | NO. HOLDING FELLOWSHIPS | SUMMER ONLY | ACADEMIC CALENDAR YEAR | | 1-1.5 YEARS | TWO YEARS | OTHER |
|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 344 | 46 | 36 | 159 | 15 | 67 | 21 |
| | BIO-SCIENCES, TOTAL | 172 | 9 | 15 | 81 | 9 | 41 | 17 |
| | BASIC MED. SCIENCES | 116 | 6 | 9 | 52 | 7 | 30 | 12 |
| | PHYSIOLOGY | 29 | 2 | 2 | 15 | 3 | 4 | 3 |
| | PHARMACOLOGY | 8 | | | 3 | 1 | 3 | 1 |
| | BIOCHEMISTRY | 46 | | 4 | 20 | 2 | 16 | 4 |
| | MICROBIOLOGY | 33 | 4 | 3 | 14 | 1 | 7 | 4 |
| | OTHER BIO-SCIENCES | 56 | 3 | 6 | 29 | 2 | 11 | 5 |
| | BOTANY | 15 | | 1 | 8 | 1 | 3 | 2 |
| | GENETICS | 7 | 1 | 2 | 2 | | 1 | 1 |
| | ZOOLOGY | 20 | 1 | 1 | 11 | 1 | 4 | 2 |
| | MISC. BIOLOGY | 14 | 1 | 2 | 8 | | 3 | |
| | MEDICAL SCIENCES | 6 | | | 3 | 1 | 2 | |
| | AGRIC. SCIENCES | 11 | 3 | 5 | 2 | | 1 | |
| | PSYCHOLOGY | 8 | | 2 | 3 | | 3 | |
| | SOCIAL SCIENCES | 61 | 17 | 4 | 31 | 3 | 6 | |
| | SOCIOLOGY | 15 | 5 | 1 | 5 | 1 | 3 | |
| | ECONOMICS | 16 | 5 | 1 | 10 | | | |
| | POLITICAL SCIENCE | 24 | 5 | 1 | 13 | 2 | 3 | |
| | HIST., GEOGRAPHY | 6 | 2 | 1 | 3 | | | |
| | M-P-E FIELDS | 60 | 9 | 5 | 29 | 2 | 11 | 4 |
| | MATHEMATICS | 17 | 3 | 2 | 12 | | | |
| | PHYSICAL SCIENCES | 37 | 4 | 3 | 13 | 2 | 11 | 4 |
| | PHYSICS | 13 | | 2 | 4 | 1 | 5 | 1 |
| | CHEMISTRY | 17 | 3 | 1 | 5 | | 5 | 3 |
| | GEOLOGY | 7 | 1 | | 4 | 1 | 1 | |
| | ENGINEERING | 6 | 2 | | 4 | | | |
| | ALL OTHER FIELDS | 26 | 8 | 5 | 10 | | 3 | |
| | LANG. & LIT. | 5 | 1 | 1 | 3 | | | |
| | ARTS, HUMANITIES | 11 | | 4 | 5 | | 2 | |
| | PROFESSIONS | 8 | 5 | | 2 | | 1 | |
| | EDUCATION | 2 | 2 | | | | | |
| COHORT 1960 | TOTAL, ALL FIELDS | 385 | 38 | 50 | 155 | 23 | 88 | 31 |
| | BIO-SCIENCES, TOTAL | 236 | 9 | 21 | 96 | 18 | 68 | 24 |
| | BASIC MED. SCIENCES | 168 | 6 | 16 | 70 | 11 | 49 | 16 |
| | PHYSIOLOGY | 46 | 3 | 5 | 19 | 4 | 11 | 4 |
| | PHARMACOLOGY | 7 | | 1 | 4 | | 2 | |
| | BIOCHEMISTRY | 80 | 2 | 9 | 32 | 6 | 22 | 9 |
| | MICROBIOLOGY | 35 | 1 | 1 | 15 | 1 | 14 | 3 |
| | OTHER BIO-SCIENCES | 68 | 3 | 5 | 26 | 7 | 19 | 8 |
| | BOTANY | 12 | | 2 | 3 | 1 | 5 | 1 |
| | GENETICS | 14 | | | 5 | | 6 | 3 |
| | ZOOLOGY | 19 | 1 | 2 | 11 | 1 | 3 | 1 |
| | MISC. BIOLOGY | 23 | 2 | 1 | 7 | 5 | 5 | 3 |
| | MEDICAL SCIENCES | 5 | | | 4 | | | 1 |
| | AGRIC. SCIENCES | 7 | | 4 | 3 | | | |
| | PSYCHOLOGY | 10 | 1 | 2 | 1 | 1 | 3 | 2 |
| | SOCIAL SCIENCES | 53 | 17 | 16 | 17 | | 3 | |
| | SOCIOLOGY | 11 | 3 | 1 | 4 | | 3 | |
| | ECONOMICS | 13 | 5 | 5 | 3 | | | |
| | POLITICAL SCIENCE | 18 | 5 | 7 | 6 | | | |
| | HIST., GEOGRAPHY | 11 | 4 | 3 | 4 | | | |
| | M-P-E FIELDS | 56 | 4 | 4 | 28 | 4 | 12 | 4 |
| | MATHEMATICS | 18 | 1 | 1 | 11 | | 5 | |
| | PHYSICAL SCIENCES | 35 | 2 | 3 | 16 | 3 | 7 | 4 |
| | PHYSICS | 11 | 1 | 2 | 4 | 1 | 2 | 1 |
| | CHEMISTRY | 19 | 1 | 1 | 9 | 2 | 4 | 2 |
| | GEOLOGY | 5 | | | 3 | | 1 | 1 |
| | ENGINEERING | 3 | 1 | | 1 | 1 | | |
| | ALL OTHER FIELDS | 18 | 7 | 3 | 6 | | 2 | |
| | LANG. & LIT. | 5 | | 2 | 3 | | | |
| | ARTS, HUMANITIES | 7 | 3 | | 3 | | 1 | |
| | PROFESSIONS | 5 | 3 | 1 | | | 1 | |
| | EDUCATION | 1 | 1 | | | | | |

## Appendix 11

## EDUCATION OF FATHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| ALL | TOTAL, ALL FIELDS | 10017 | 215 | 213 | 878 | 2027 | 932 | 1612 | 1110 | 1361 | 887 | 443 | 339 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1355 | 23 | 25 | 132 | 286 | 110 | 188 | 140 | 172 | 129 | 61 | 89 |
| | BIO-SCIENCES, TOTAL | 352 | 10 | 10 | 37 | 82 | 25 | 53 | 28 | 44 | 25 | 11 | 27 |
| | BASIC MED. SCIENCES | 181 | 3 | 3 | 22 | 41 | 17 | 29 | 9 | 22 | 12 | 6 | 17 |
| | PHYSIOLOGY | 80 | 1 | 1 | 7 | 15 | 10 | 11 | 3 | 10 | 8 | 5 | 9 |
| | PHARMACOLOGY | 15 | | | 6 | 5 | 1 | 1 | | | | | 2 |
| | BIOCHEMISTRY | 35 | 2 | 1 | 5 | 6 | 1 | 7 | 3 | 7 | 1 | 1 | 1 |
| | MICROBIOLOGY | 51 | | 1 | 4 | 15 | 5 | 10 | 3 | 5 | 3 | | 5 |
| | OTHER BIO-SCIENCES | 171 | 7 | 7 | 15 | 41 | 8 | 24 | 19 | 22 | 13 | 5 | 10 |
| | BOTANY | 59 | 2 | 1 | 4 | 15 | 2 | 9 | 5 | 11 | 3 | 2 | 5 |
| | GENETICS | 19 | | 2 | 4 | 1 | 4 | 4 | 2 | | 1 | | 1 |
| | ZOOLOGY | 63 | 1 | 4 | 7 | 17 | | 9 | 7 | 8 | 4 | 3 | 3 |
| | MISC. BIOLOGY | 30 | 4 | | | 8 | 2 | 2 | 5 | 3 | 5 | | 1 |
| | MEDICAL SCIENCES | 39 | | | 2 | 7 | 4 | 5 | 2 | 2 | 6 | 3 | 8 |
| | AGRIC. SCIENCES | 77 | 1 | 2 | 9 | 28 | 9 | 7 | 5 | 3 | 9 | 1 | 3 |
| | PSYCHOLOGY | 61 | | | 6 | 14 | 2 | 10 | 7 | 5 | 11 | 4 | 2 |
| | SOCIAL SCIENCES | 254 | 3 | 4 | 21 | 45 | 16 | 34 | 29 | 44 | 28 | 14 | 16 |
| | SOCIOLOGY | 78 | | 2 | 3 | 13 | 5 | 13 | 8 | 11 | 11 | 3 | 9 |
| | ECONOMICS | 56 | | 1 | 5 | 7 | 3 | 8 | 7 | 12 | 5 | 3 | 5 |
| | POLITICAL SCIENCE | 61 | 2 | 1 | 5 | 15 | 5 | 9 | 6 | 10 | 4 | 3 | 1 |
| | HIST., GEOGRAPHY | 59 | 1 | | 8 | 10 | 3 | 4 | 8 | 11 | 8 | 5 | 1 |
| | M-P-E FIELDS | 346 | 4 | 6 | 31 | 68 | 34 | 55 | 41 | 44 | 34 | 17 | 12 |
| | MATHEMATICS | 69 | 2 | 2 | 11 | 12 | 4 | 15 | 8 | 6 | 3 | 3 | 3 |
| | PHYSICAL SCIENCES | 206 | 1 | 4 | 16 | 40 | 20 | 28 | 23 | 33 | 23 | 13 | 5 |
| | PHYSICS | 71 | | | 11 | 17 | 4 | 6 | 9 | 7 | 7 | 7 | 3 |
| | CHEMISTRY | 76 | 1 | | 4 | 10 | 9 | 14 | 12 | 15 | 8 | 2 | 1 |
| | GEOLOGY | 59 | | 4 | 1 | 13 | 7 | 8 | 2 | 11 | 8 | 4 | 1 |
| | ENGINEERING | 71 | 1 | | 4 | 16 | 10 | 12 | 10 | 5 | 8 | 1 | 4 |
| | ALL OTHER FIELDS | 226 | 5 | 3 | 26 | 42 | 20 | 24 | 28 | 30 | 16 | 11 | 21 |
| | LANG. & LIT. | 77 | 1 | 1 | 8 | 20 | 7 | 9 | 12 | 7 | 5 | 1 | 6 |
| | ARTS, HUMANITIES | 60 | 3 | 2 | 7 | 6 | 5 | 6 | 5 | 10 | 6 | 6 | 4 |
| | PROFESSIONS | 48 | | | 4 | 7 | 4 | 6 | 6 | 7 | 4 | 3 | 7 |
| | EDUCATION | 41 | 1 | | 7 | 9 | 4 | 3 | 5 | 6 | 1 | 1 | 4 |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 45 | 32 | 131 | 353 | 129 | 259 | 185 | 197 | 131 | 89 | 59 |
| | BIO-SCIENCES, TOTAL | 570 | 15 | 6 | 47 | 151 | 41 | 95 | 57 | 66 | 48 | 28 | 16 |
| | BASIC MED. SCIENCES | 378 | 14 | 3 | 33 | 99 | 25 | 58 | 35 | 51 | 30 | 17 | 13 |
| | PHYSIOLOGY | 112 | 2 | 1 | 7 | 22 | 9 | 22 | 10 | 17 | 12 | 4 | 6 |
| | PHARMACOLOGY | 25 | 1 | 1 | 5 | 3 | 1 | 5 | 3 | 1 | 2 | 1 | 2 |
| | BIOCHEMISTRY | 155 | 7 | 1 | 13 | 47 | 12 | 21 | 11 | 23 | 9 | 9 | 2 |
| | MICROBIOLOGY | 86 | 4 | | 8 | 27 | 3 | 10 | 11 | 10 | 7 | 3 | 3 |
| | OTHER BIO-SCIENCES | 192 | 1 | 3 | 14 | 52 | 16 | 37 | 22 | 15 | 18 | 11 | 3 |
| | BOTANY | 69 | | | 4 | 17 | 3 | 15 | 10 | 7 | 5 | 5 | 3 |
| | GENETICS | 32 | | 1 | 5 | 5 | 4 | 4 | 4 | 3 | 3 | | |
| | ZOOLOGY | 90 | 1 | 2 | 5 | 30 | 9 | 17 | 8 | 5 | 10 | 3 | |
| | MISC. BIOLOGY | 1 | | | | | | 1 | | | | | |
| | MEDICAL SCIENCES | 31 | 2 | 1 | | 6 | | 5 | 4 | 2 | 5 | 3 | 3 |
| | AGRIC. SCIENCES | 74 | 2 | 4 | 5 | 28 | 6 | 11 | 5 | 4 | 4 | 3 | 2 |
| | PSYCHOLOGY | 83 | 1 | 2 | 2 | 14 | 4 | 11 | 16 | 10 | 12 | 8 | 3 |
| | SOCIAL SCIENCES | 252 | 9 | 3 | 20 | 46 | 24 | 32 | 30 | 44 | 22 | 10 | 12 |
| | SOCIOLOGY | 65 | 4 | 2 | 5 | 14 | 1 | 10 | 5 | 8 | 6 | 4 | 6 |
| | ECONOMICS | 80 | 1 | | 8 | 15 | 10 | 9 | 10 | 16 | 6 | 1 | 4 |
| | POLITICAL SCIENCE | 49 | 3 | | 4 | 8 | 7 | 9 | 5 | 5 | 6 | 1 | 1 |
| | HIST., GEOGRAPHY | 58 | 1 | 1 | 3 | 9 | 6 | 4 | 10 | 15 | 4 | 4 | 1 |
| | M-P-E FIELDS | 367 | 8 | 11 | 34 | 63 | 32 | 66 | 51 | 40 | 27 | 26 | 9 |
| | MATHEMATICS | 62 | 2 | 5 | 6 | 12 | 3 | 8 | 8 | 9 | 5 | 2 | 2 |
| | PHYSICAL SCIENCES | 238 | 5 | 4 | 21 | 33 | 24 | 44 | 32 | 27 | 18 | 24 | 6 |
| | PHYSICS | 69 | 1 | 1 | 6 | 7 | 6 | 12 | 7 | 10 | 6 | 11 | 2 |
| | CHEMISTRY | 92 | 2 | 2 | 9 | 14 | 10 | 16 | 16 | 8 | 5 | 7 | 3 |
| | GEOLOGY | 77 | 2 | 1 | 6 | 12 | 8 | 16 | 9 | 9 | 7 | 6 | 1 |
| | ENGINEERING | 67 | 1 | 2 | 7 | 18 | 5 | 14 | 11 | 4 | 4 | | 1 |
| | ALL OTHER FIELDS | 233 | 8 | 5 | 23 | 45 | 22 | 39 | 22 | 31 | 13 | 11 | 14 |
| | LANG. & LIT. | 76 | 4 | 1 | 3 | 14 | 8 | 15 | 10 | 8 | 8 | 1 | 4 |
| | ARTS, HUMANITIES | 62 | 2 | 1 | 4 | 10 | 6 | 13 | 5 | 18 | | 1 | 2 |
| | PROFESSIONS | 43 | 1 | 1 | 8 | 6 | 3 | 4 | 2 | 2 | 5 | 6 | 5 |
| | EDUCATION | 52 | 1 | 2 | 8 | 15 | 5 | 7 | 5 | 3 | | 3 | 3 |

Appendix 11, continued

EDUCATION OF FATHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 27 | 26 | 129 | 265 | 112 | 199 | 136 | 170 | 123 | 58 | 44 |
| | BIO-SCIENCES, TOTAL | 328 | 9 | 7 | 43 | 74 | 32 | 52 | 32 | 27 | 28 | 17 | 7 |
| | BASIC MED. SCIENCES | 156 | 7 | 1 | 19 | 40 | 10 | 26 | 15 | 12 | 13 | 7 | 6 |
| | PHYSIOLOGY | 36 | | | 6 | 8 | 1 | 9 | 4 | 2 | 3 | 2 | 1 |
| | PHARMACOLOGY | 18 | 1 | 1 | 3 | 2 | 2 | 3 | 3 | | 1 | | 2 |
| | BIOCHEMISTRY | 64 | 5 | | 7 | 21 | 4 | 7 | 4 | 6 | 4 | 4 | 2 |
| | MICROBIOLOGY | 38 | 1 | | 3 | 9 | 3 | 7 | 4 | 4 | 5 | 1 | 1 |
| | OTHER BIO-SCIENCES | 172 | 2 | 6 | 24 | 34 | 22 | 26 | 17 | 15 | 15 | 10 | 1 |
| | BOTANY | 69 | 1 | 2 | 10 | 13 | 7 | 10 | 7 | 9 | 8 | 2 | |
| | GENETICS | 13 | | 1 | 2 | 3 | 2 | 2 | | 1 | | 2 | |
| | ZOOLOGY | 89 | 1 | 3 | 12 | 18 | 13 | 14 | 9 | 5 | 7 | 6 | 1 |
| | MISC. BIOLOGY | 1 | | | | | | | 1 | | | | |
| | MEDICAL SCIENCES | 26 | | 1 | 1 | 4 | 2 | 5 | 3 | 3 | 6 | | 1 |
| | AGRIC. SCIENCES | 65 | 2 | 2 | 5 | 23 | 3 | 12 | 8 | 5 | 4 | | 1 |
| | PSYCHOLOGY | 76 | 3 | 3 | 5 | 14 | 11 | 10 | 8 | 11 | 6 | 2 | 3 |
| | SOCIAL SCIENCES | 257 | 5 | 3 | 25 | 47 | 23 | 36 | 31 | 50 | 17 | 10 | 10 |
| | SOCIOLOGY | 64 | | | 6 | 12 | 5 | 10 | 8 | 15 | 6 | 2 | |
| | ECONOMICS | 80 | 3 | 1 | 9 | 13 | 5 | 12 | 9 | 14 | 3 | 5 | 6 |
| | POLITICAL SCIENCE | 32 | 1 | 1 | 1 | 8 | 4 | 3 | 4 | 6 | 1 | 1 | 2 |
| | HIST., GEOGRAPHY | 81 | 1 | 1 | 9 | 14 | 9 | 11 | 10 | 15 | 7 | 2 | 2 |
| | M-P-E FIELDS | 296 | 6 | 3 | 20 | 46 | 23 | 52 | 32 | 44 | 38 | 21 | 11 |
| | MATHEMATICS | 63 | 1 | | 6 | 9 | 6 | 8 | 8 | 9 | 8 | 5 | 3 |
| | PHYSICAL SCIENCES | 185 | 1 | 2 | 13 | 29 | 13 | 35 | 18 | 30 | 28 | 11 | 5 |
| | PHYSICS | 67 | 1 | | 3 | 8 | 3 | 13 | 5 | 13 | 14 | 5 | 2 |
| | CHEMISTRY | 78 | | 1 | 8 | 12 | 9 | 15 | 9 | 12 | 6 | 4 | 2 |
| | GEOLOGY | 40 | | 1 | 2 | 9 | 1 | 7 | 4 | 5 | 8 | 2 | 1 |
| | ENGINEERING | 48 | 4 | 1 | 1 | 8 | 4 | 9 | 6 | 5 | 2 | 5 | 3 |
| | ALL OTHER FIELDS | 241 | 2 | 7 | 30 | 57 | 18 | 32 | 22 | 30 | 24 | 8 | 11 |
| | LANG. & LIT. | 67 | | 1 | 7 | 15 | 7 | 14 | 5 | 5 | 8 | 3 | 2 |
| | ARTS, HUMANITIES | 46 | | 1 | 3 | 10 | 4 | 4 | 4 | 7 | 7 | 2 | 4 |
| | PROFESSIONS | 56 | 1 | 4 | 4 | 14 | 2 | 5 | 5 | 13 | 4 | 2 | 2 |
| | EDUCATION | 72 | 1 | 1 | 16 | 18 | 5 | 9 | 8 | 5 | 5 | 1 | 3 |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 27 | 43 | 139 | 332 | 156 | 251 | 185 | 226 | 153 | 68 | 47 |
| | BIO-SCIENCES, TOTAL | 418 | 10 | 14 | 30 | 83 | 48 | 78 | 42 | 44 | 38 | 12 | 19 |
| | BASIC MED. SCIENCES | 246 | 9 | 7 | 18 | 48 | 29 | 51 | 21 | 24 | 20 | 8 | 11 |
| | PHYSIOLOGY | 43 | | 1 | 4 | 4 | 5 | 6 | 4 | 5 | 10 | 3 | 1 |
| | PHARMACOLOGY | 29 | 2 | 2 | 1 | 7 | 2 | 5 | 4 | 4 | | 1 | 1 |
| | BIOCHEMISTRY | 90 | 5 | 2 | 5 | 21 | 14 | 16 | 6 | 6 | 7 | 3 | 5 |
| | MICROBIOLOGY | 84 | 2 | 2 | 8 | 16 | 8 | 24 | 7 | 9 | 3 | 1 | 4 |
| | OTHER BIO-SCIENCES | 172 | 1 | 7 | 12 | 35 | 19 | 27 | 21 | 20 | 18 | 4 | 8 |
| | BOTANY | 71 | | 2 | 4 | 15 | 10 | 12 | 8 | 11 | 3 | 3 | 3 |
| | GENETICS | 14 | | 2 | | 5 | | 1 | 2 | 1 | 1 | | 2 |
| | ZOOLOGY | 87 | 1 | 3 | 8 | 15 | 9 | 14 | 11 | 8 | 14 | 1 | 3 |
| | MISC. BIOLOGY | | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 1 | 1 | 2 | 2 | 2 | 5 | 3 | 6 | 10 | 2 | 3 |
| | AGRIC. SCIENCES | 103 | | 5 | 16 | 29 | 7 | 13 | 13 | 8 | 7 | 4 | 1 |
| | PSYCHOLOGY | 95 | 1 | 4 | 8 | 30 | 6 | 13 | 10 | 6 | 7 | 5 | 5 |
| | SOCIAL SCIENCES | 267 | 4 | 8 | 17 | 68 | 23 | 35 | 36 | 35 | 25 | 12 | 4 |
| | SOCIOLOGY | 61 | 1 | 3 | 6 | 15 | 6 | 7 | 9 | 3 | 3 | 5 | 3 |
| | ECONOMICS | 54 | 2 | 1 | 4 | 14 | 5 | 6 | 6 | 12 | 3 | 1 | |
| | POLITICAL SCIENCE | 75 | | 2 | 5 | 16 | 6 | 8 | 12 | 9 | 11 | 5 | 1 |
| | HIST., GEOGRAPHY | 77 | 1 | 2 | 2 | 23 | 6 | 14 | 9 | 11 | 8 | 1 | |
| | M-P-E FIELDS | 435 | 5 | 8 | 41 | 61 | 43 | 73 | 43 | 84 | 46 | 21 | 10 |
| | MATHEMATICS | 68 | 2 | 2 | 7 | 14 | 7 | 9 | 5 | 11 | 9 | 1 | 1 |
| | PHYSICAL SCIENCES | 271 | 2 | 4 | 25 | 33 | 24 | 46 | 30 | 53 | 31 | 17 | 6 |
| | PHYSICS | 90 | | | 11 | 7 | 6 | 13 | 15 | 22 | 9 | 6 | 1 |
| | CHEMISTRY | 77 | | 3 | 7 | 18 | 6 | 16 | 5 | 10 | 6 | 5 | 1 |
| | GEOLOGY | 104 | 2 | 1 | 7 | 8 | 12 | 17 | 10 | 21 | 16 | 6 | 4 |
| | ENGINEERING | 96 | 1 | 2 | 9 | 14 | 12 | 18 | 8 | 20 | 6 | 3 | 3 |
| | ALL OTHER FIELDS | 272 | 6 | 3 | 25 | 59 | 27 | 34 | 38 | 43 | 20 | 12 | 5 |
| | LANG. & LIT. | 74 | 1 | 1 | 5 | 12 | 9 | 12 | 6 | 12 | 10 | 4 | 2 |
| | ARTS, HUMANITIES | 69 | 1 | | 4 | 13 | 4 | 6 | 12 | 20 | 5 | 3 | 1 |
| | PROFESSIONS | 61 | 2 | | 5 | 13 | 5 | 10 | 9 | 8 | 4 | 3 | 2 |
| | EDUCATION | 68 | 2 | 2 | 11 | 21 | 9 | 6 | 11 | 3 | 1 | 2 | |

Appendix 11, continued

EDUCATION OF FATHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 52 | 48 | 173 | 376 | 182 | 334 | 202 | 285 | 142 | 72 | 46 |
| | BIO-SCIENCES, TOTAL | 663 | 24 | 10 | 63 | 129 | 79 | 121 | 62 | 88 | 47 | 23 | 17 |
| | BASIC MED. SCIENCES | 425 | 17 | 6 | 37 | 88 | 53 | 80 | 32 | 54 | 30 | 16 | 12 |
| | PHYSIOLOGY | 123 | 3 | 1 | 11 | 24 | 17 | 21 | 11 | 18 | 9 | 5 | 3 |
| | PHARMACOLOGY | 36 | 1 | 2 | 4 | 9 | 7 | 4 | 4 | 2 | 2 | | 1 |
| | BIOCHEMISTRY | 139 | 9 | 2 | 10 | 28 | 13 | 27 | 6 | 20 | 9 | 10 | 5 |
| | MICROBIOLOGY | 127 | 4 | 1 | 12 | 27 | 16 | 28 | 11 | 14 | 10 | 1 | 3 |
| | OTHER BIO-SCIENCES | 238 | 7 | 4 | 26 | 41 | 26 | 41 | 30 | 34 | 17 | 7 | 5 |
| | BOTANY | 91 | 2 | 4 | 11 | 18 | 10 | 20 | 11 | 6 | 6 | 1 | 2 |
| | GENETICS | 21 | 2 | | 1 | 4 | 2 | 2 | 2 | 7 | | 1 | |
| | ZOOLOGY | 93 | 3 | | 10 | 14 | 11 | 15 | 11 | 15 | 10 | 2 | 2 |
| | MISC. BIOLOGY | 33 | | | 4 | 5 | 3 | 4 | 6 | 6 | 1 | 3 | 1 |
| | MEDICAL SCIENCES | 66 | 2 | 3 | 4 | 9 | 5 | 15 | 5 | 8 | 9 | 2 | 4 |
| | AGRIC. SCIENCES | 125 | | 6 | 15 | 24 | 15 | 22 | 15 | 14 | 5 | 5 | 4 |
| | PSYCHOLOGY | 73 | 4 | 4 | 7 | 14 | 3 | 13 | 6 | 11 | 5 | 5 | 1 |
| | SOCIAL SCIENCES | 318 | 7 | 7 | 35 | 72 | 29 | 44 | 32 | 55 | 21 | 11 | 5 |
| | SOCIOLOGY | 84 | | 2 | 9 | 19 | 11 | 11 | 8 | 14 | 6 | 2 | 2 |
| | ECONOMICS | 84 | 2 | 3 | 15 | 13 | 8 | 10 | 9 | 12 | 5 | 5 | 2 |
| | POLITICAL SCIENCE | 76 | 4 | 2 | 6 | 10 | 5 | 15 | 7 | 16 | 8 | 3 | |
| | HIST., GEOGRAPHY | 74 | 1 | | 5 | 30 | 5 | 8 | 8 | 13 | 2 | 1 | 1 |
| | M-P-E FIELDS | 405 | 8 | 13 | 23 | 81 | 37 | 67 | 43 | 75 | 36 | 14 | 8 |
| | MATHEMATICS | 96 | 5 | 4 | 12 | 12 | 5 | 13 | 8 | 19 | 7 | 7 | 4 |
| | PHYSICAL SCIENCES | 222 | 3 | 8 | 8 | 53 | 20 | 38 | 21 | 38 | 23 | 6 | 4 |
| | PHYSICS | 70 | 1 | 1 | 2 | 12 | 8 | 14 | 8 | 14 | 6 | 4 | |
| | CHEMISTRY | 80 | | 5 | 4 | 26 | 8 | 11 | 3 | 11 | 10 | | 2 |
| | GEOLOGY | 72 | 2 | 2 | 2 | 15 | 4 | 13 | 10 | 13 | 7 | 2 | 2 |
| | ENGINEERING | 87 | | 1 | 3 | 16 | 12 | 16 | 14 | 18 | 6 | 1 | |
| | ALL OTHER FIELDS | 262 | 7 | 5 | 26 | 47 | 14 | 52 | 39 | 34 | 19 | 12 | 7 |
| | LANG. & LIT. | 67 | 1 | | 5 | 11 | 5 | 12 | 15 | 13 | 2 | 1 | 2 |
| | ARTS, HUMANITIES | 64 | | | 6 | 9 | 3 | 14 | 8 | 8 | 6 | 9 | 1 |
| | PROFESSIONS | 56 | 4 | 1 | 6 | 11 | 1 | 9 | 10 | 7 | 3 | 2 | 2 |
| | EDUCATION | 75 | 2 | 4 | 9 | 16 | 5 | 17 | 6 | 6 | 8 | | 2 |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 41 | 39 | 174 | 415 | 243 | 381 | 262 | 311 | 209 | 95 | 54 |
| | BIO-SCIENCES, TOTAL | 835 | 18 | 12 | 76 | 149 | 87 | 154 | 84 | 113 | 82 | 35 | 25 |
| | BASIC MED. SCIENCES | 502 | 13 | 6 | 47 | 101 | 44 | 96 | 56 | 63 | 45 | 18 | 13 |
| | PHYSIOLOGY | 140 | 2 | 1 | 7 | 33 | 14 | 29 | 24 | 11 | 11 | 5 | 3 |
| | PHARMACOLOGY | 30 | 2 | | 2 | 6 | 5 | 7 | 1 | 7 | | | |
| | BIOCHEMISTRY | 205 | 7 | 2 | 24 | 35 | 9 | 40 | 19 | 32 | 23 | 9 | 5 |
| | MICROBIOLOGY | 127 | 2 | 3 | 14 | 27 | 16 | 20 | 12 | 13 | 11 | 4 | 5 |
| | OTHER BIO-SCIENCES | 333 | 5 | 6 | 29 | 48 | 43 | 58 | 28 | 50 | 37 | 17 | 12 |
| | BOTANY | 86 | 1 | 1 | 7 | 9 | 10 | 15 | 6 | 11 | 14 | 7 | 5 |
| | GENETICS | 56 | | 1 | 6 | 7 | 8 | 8 | 8 | 7 | 8 | 1 | 2 |
| | ZOOLOGY | 103 | 3 | 2 | 6 | 21 | 14 | 18 | 6 | 20 | 7 | 3 | 3 |
| | MISC. BIOLOGY | 88 | 1 | 2 | 10 | 11 | 11 | 17 | 8 | 12 | 8 | 6 | 2 |
| | MEDICAL SCIENCES | 55 | 1 | 3 | 5 | 8 | 7 | 13 | 1 | 4 | 9 | 3 | 1 |
| | AGRIC. SCIENCES | 92 | | 3 | 8 | 21 | 11 | 19 | 14 | 9 | 6 | | 1 |
| | PSYCHOLOGY | 80 | 2 | 2 | 7 | 9 | 8 | 19 | 8 | 12 | 11 | 2 | |
| | SOCIAL SCIENCES | 364 | 8 | 11 | 25 | 67 | 35 | 50 | 52 | 49 | 42 | 21 | 4 |
| | SOCIOLOGY | 97 | 2 | 3 | 5 | 22 | 6 | 13 | 14 | 10 | 11 | 9 | 2 |
| | ECONOMICS | 82 | | | 8 | 20 | 7 | 11 | 10 | 12 | 8 | 6 | |
| | POLITICAL SCIENCE | 85 | 2 | 3 | 7 | 9 | 11 | 14 | 14 | 9 | 13 | 2 | 1 |
| | HIST., GEOGRAPHY | 100 | 4 | 5 | 5 | 16 | 11 | 12 | 14 | 18 | 10 | 4 | 1 |
| | M-P-E FIELDS | 434 | 5 | 3 | 28 | 82 | 47 | 67 | 58 | 68 | 40 | 22 | 14 |
| | MATHEMATICS | 100 | 2 | 1 | 6 | 17 | 12 | 13 | 17 | 14 | 10 | 5 | 3 |
| | PHYSICAL SCIENCES | 240 | 3 | 2 | 11 | 42 | 21 | 41 | 32 | 44 | 23 | 12 | 9 |
| | PHYSICS | 69 | 1 | | 1 | 12 | 6 | 7 | 11 | 14 | 8 | 5 | 4 |
| | CHEMISTRY | 90 | 2 | 1 | 8 | 16 | 10 | 22 | 10 | 11 | 4 | 4 | 2 |
| | GEOLOGY | 81 | | 1 | 2 | 14 | 5 | 12 | 11 | 19 | 11 | 3 | 3 |
| | ENGINEERING | 94 | | | 11 | 23 | 14 | 13 | 9 | 10 | 7 | 5 | 2 |
| | ALL OTHER FIELDS | 364 | 7 | 5 | 25 | 79 | 48 | 59 | 45 | 56 | 19 | 12 | 9 |
| | LANG. & LIT. | 96 | 1 | 1 | 4 | 22 | 11 | 17 | 15 | 15 | 5 | 3 | 2 |
| | ARTS, HUMANITIES | 78 | | 1 | 6 | 12 | 11 | 12 | 9 | 16 | 6 | 4 | 1 |
| | PROFESSIONS | 102 | 2 | 2 | 6 | 23 | 16 | 14 | 11 | 17 | 3 | 3 | 5 |
| | EDUCATION | 88 | 4 | 1 | 9 | 22 | 10 | 16 | 10 | 8 | 5 | 2 | 1 |

## Appendix 12

## EDUCATION OF MOTHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| ALL | TOTAL, ALL FIELDS | 10017 | 232 | 119 | 656 | 1959 | 1012 | 2642 | 1728 | 1039 | 227 | 33 | 370 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1355 | 25 | 11 | 84 | 305 | 114 | 349 | 232 | 119 | 20 | 2 | 94 |
| | BIO-SCIENCES, TOTAL | 352 | 10 | 5 | 24 | 84 | 22 | 95 | 59 | 27 | 4 | 1 | 21 |
| | BASIC MED. SCIENCES | 181 | 5 | 2 | 15 | 40 | 12 | 46 | 27 | 15 | 3 | 1 | 15 |
| | PHYSIOLOGY | 80 | 1 | 1 | 6 | 18 | 5 | 15 | 13 | 9 | 2 | 1 | 9 |
| | PHARMACOLOGY | 15 | | | 4 | 7 | 1 | | 1 | | | | 2 |
| | BIOCHEMISTRY | 35 | 4 | | 2 | 6 | 3 | 11 | 7 | 2 | | | |
| | MICROBIOLOGY | 51 | | 1 | 3 | 9 | 3 | 20 | 6 | 4 | 1 | | 4 |
| | OTHER BIO-SCIENCES | 171 | 5 | 3 | 9 | 44 | 10 | 49 | 32 | 12 | 1 | | 6 |
| | BOTANY | 59 | | 1 | 3 | 18 | 1 | 16 | 11 | 5 | | | 4 |
| | GENETICS | 19 | | 1 | 1 | 2 | 2 | 5 | 6 | 1 | | | 1 |
| | ZOOLOGY | 63 | 1 | 1 | 4 | 17 | 5 | 19 | 13 | 2 | 1 | | |
| | MISC. BIOLOGY | 30 | 4 | | 1 | 7 | 2 | 9 | 2 | 4 | | | 1 |
| | MEDICAL SCIENCES | 39 | | | 1 | 11 | 3 | 5 | 5 | 3 | 2 | | 9 |
| | AGRIC. SCIENCES | 77 | 1 | | 7 | 20 | 10 | 13 | 13 | 7 | 3 | | 3 |
| | PSYCHOLOGY | 61 | 1 | | 3 | 16 | 5 | 16 | 12 | 6 | 1 | | 1 |
| | SOCIAL SCIENCES | 254 | 4 | 1 | 14 | 56 | 20 | 66 | 41 | 24 | 6 | | 22 |
| | SOCIOLOGY | 78 | 2 | | 5 | 12 | 6 | 25 | 8 | 6 | 1 | | 13 |
| | ECONOMICS | 56 | | | 1 | 17 | 3 | 12 | 12 | 5 | 1 | | 5 |
| | POLITICAL SCIENCE | 61 | 1 | 1 | 4 | 13 | 7 | 18 | 10 | 6 | | | 1 |
| | HIST., GEOGRAPHY | 59 | 1 | | 4 | 14 | 4 | 11 | 11 | 7 | 4 | | 3 |
| | M-P-E FIELDS | 346 | 4 | 3 | 20 | 68 | 32 | 103 | 64 | 33 | 4 | 1 | 14 |
| | MATHEMATICS | 69 | 2 | 1 | 9 | 12 | 6 | 16 | 11 | 7 | 2 | | 3 |
| | PHYSICAL SCIENCES | 206 | 1 | 1 | 8 | 40 | 20 | 68 | 36 | 22 | 2 | 1 | 7 |
| | PHYSICS | 71 | | 1 | 4 | 16 | 8 | 18 | 13 | 8 | | | 3 |
| | CHEMISTRY | 76 | 1 | | 1 | 12 | 3 | 33 | 14 | 10 | 1 | | 1 |
| | GEOLOGY | 59 | | | 3 | 12 | 9 | 17 | 9 | 4 | 1 | 1 | 3 |
| | ENGINEERING | 71 | 1 | 1 | 3 | 16 | 6 | 19 | 17 | 4 | | | 4 |
| | ALL OTHER FIELDS | 226 | 5 | 2 | 15 | 50 | 22 | 51 | 38 | 19 | | | 24 |
| | LANG. & LIT. | 77 | 1 | | 7 | 15 | 11 | 19 | 13 | 5 | | | 6 |
| | ARTS, HUMANITIES | 60 | 3 | 2 | 3 | 8 | 5 | 13 | 12 | 8 | | | 6 |
| | PROFESSIONS | 48 | | | 2 | 10 | 4 | 12 | 8 | 5 | | | 7 |
| | EDUCATION | 41 | 1 | | 3 | 17 | 2 | 7 | 5 | 1 | | | 5 |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 48 | 21 | 103 | 337 | 150 | 415 | 291 | 160 | 19 | 4 | 62 |
| | BIO-SCIENCES, TOTAL | 570 | 16 | 5 | 40 | 145 | 47 | 144 | 98 | 49 | 4 | 2 | 20 |
| | BASIC MED. SCIENCES | 378 | 14 | 4 | 26 | 96 | 29 | 92 | 60 | 37 | 2 | 2 | 16 |
| | PHYSIOLOGY | 112 | 1 | | 5 | 29 | 7 | 30 | 15 | 15 | 2 | | 8 |
| | PHARMACOLOGY | 25 | 1 | 1 | 5 | 5 | | 3 | 4 | 3 | | | 3 |
| | BIOCHEMISTRY | 155 | 8 | 3 | 10 | 38 | 12 | 36 | 30 | 14 | | 2 | 2 |
| | MICROBIOLOGY | 86 | 4 | | 6 | 24 | 10 | 23 | 11 | 5 | | | 3 |
| | OTHER BIO-SCIENCES | 192 | 2 | 1 | 14 | 49 | 18 | 52 | 38 | 12 | 2 | | 4 |
| | BOTANY | 69 | | | 3 | 11 | 8 | 23 | 16 | 4 | 1 | | 3 |
| | GENETICS | 32 | | 1 | 1 | 10 | 3 | 7 | 10 | | | | |
| | ZOOLOGY | 90 | 2 | | 10 | 28 | 7 | 21 | 12 | 8 | 1 | | 1 |
| | MISC. BIOLOGY | 1 | | | | | | 1 | | | | | |
| | MEDICAL SCIENCES | 31 | 2 | | 1 | 4 | 3 | 10 | 5 | 1 | 1 | | 4 |
| | AGRIC. SCIENCES | 74 | 3 | 1 | 4 | 20 | 8 | 18 | 14 | 4 | | | 2 |
| | PSYCHOLOGY | 83 | 2 | 3 | 1 | 14 | 7 | 21 | 21 | 9 | 2 | | 3 |
| | SOCIAL SCIENCES | 252 | 7 | 3 | 15 | 47 | 22 | 58 | 54 | 29 | 5 | 1 | 11 |
| | SOCIOLOGY | 65 | 2 | 1 | 5 | 9 | 7 | 18 | 7 | 8 | 3 | | 5 |
| | ECONOMICS | 80 | | 1 | 5 | 17 | 9 | 14 | 22 | 7 | 1 | | 4 |
| | POLITICAL SCIENCE | 49 | 4 | | 3 | 9 | 2 | 14 | 10 | 6 | | | 1 |
| | HIST., GEOGRAPHY | 58 | 1 | 1 | 2 | 12 | 4 | 12 | 15 | 8 | 1 | 1 | 1 |
| | M-P-E FIELDS | 367 | 13 | 6 | 17 | 54 | 43 | 112 | 61 | 46 | 7 | 1 | 7 |
| | MATHEMATICS | 62 | 4 | 2 | 2 | 11 | 9 | 17 | 10 | 5 | 2 | | |
| | PHYSICAL SCIENCES | 238 | 7 | 4 | 9 | 23 | 27 | 75 | 43 | 39 | 4 | 1 | 6 |
| | PHYSICS | 69 | 3 | 2 | 3 | 5 | 11 | 12 | 11 | 17 | 2 | 1 | 2 |
| | CHEMISTRY | 92 | 3 | 2 | 5 | 11 | 9 | 33 | 17 | 8 | 1 | | 3 |
| | GEOLOGY | 77 | 1 | | 1 | 7 | 7 | 30 | 15 | 14 | 1 | | 1 |
| | ENGINEERING | 67 | 2 | | 6 | 20 | 7 | 20 | 8 | 2 | 1 | | 1 |
| | ALL OTHER FIELDS | 233 | 5 | 3 | 25 | 53 | 20 | 52 | 38 | 22 | | | 15 |
| | LANG. & LIT. | 76 | 2 | 2 | 4 | 15 | 8 | 15 | 18 | 6 | | | 6 |
| | ARTS, HUMANITIES | 62 | 2 | 1 | 6 | 14 | 3 | 22 | 5 | 6 | | | 3 |
| | PROFESSIONS | 43 | 1 | | 2 | 10 | 4 | 9 | 5 | 8 | | | 4 |
| | EDUCATION | 52 | | | 13 | 14 | 5 | 6 | 10 | 2 | | | 2 |

Appendix 12, continued

EDUCATION OF MOTHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 24 | 14 | 107 | 261 | 134 | 312 | 212 | 144 | 29 | 2 | 50 |
| | BIO-SCIENCES, TOTAL | 328 | 9 | 5 | 27 | 82 | 43 | 62 | 56 | 30 | 4 | 1 | 9 |
| | BASIC MED. SCIENCES | 156 | 5 | 1 | 11 | 42 | 19 | 28 | 28 | 14 | | 1 | 7 |
| | PHYSIOLOGY | 36 | | | 5 | 6 | 4 | 7 | 7 | 4 | | 1 | 2 |
| | PHARMACOLOGY | 18 | | | 2 | 4 | 5 | 3 | 2 | | | | 2 |
| | BIOCHEMISTRY | 64 | 3 | 1 | 3 | 23 | 4 | 10 | 12 | 6 | | | 2 |
| | MICROBIOLOGY | 38 | 2 | | 1 | 9 | 6 | 8 | 7 | 4 | | | 1 |
| | OTHER BIO-SCIENCES | 172 | 4 | 4 | 16 | 40 | 24 | 34 | 28 | 16 | 4 | | 2 |
| | BOTANY | 69 | 3 | 1 | 4 | 15 | 8 | 17 | 12 | 7 | 2 | | |
| | GENETICS | 13 | | | 2 | 3 | 2 | 1 | 1 | 4 | | | |
| | ZOOLOGY | 89 | 1 | 3 | 10 | 22 | 14 | 16 | 14 | 5 | 2 | | 2 |
| | MISC. BIOLOGY | 1 | | | | | | | 1 | | | | |
| | MEDICAL SCIENCES | 26 | | | 4 | 2 | 2 | 8 | 5 | 4 | | | 1 |
| | AGRIC. SCIENCES | 65 | 1 | | 5 | 16 | 7 | 17 | 12 | 5 | 1 | | 1 |
| | PSYCHOLOGY | 76 | 1 | | 5 | 10 | 11 | 22 | 14 | 9 | 2 | | 2 |
| | SOCIAL SCIENCES | 257 | 5 | 4 | 21 | 43 | 25 | 69 | 46 | 28 | 5 | 1 | 10 |
| | SOCIOLOGY | 64 | 1 | 1 | 7 | 9 | 8 | 19 | 13 | 4 | 2 | | |
| | ECONOMICS | 80 | 1 | 1 | 6 | 16 | 4 | 16 | 15 | 13 | 2 | 1 | 5 |
| | POLITICAL SCIENCE | 32 | 2 | | 2 | 5 | 2 | 10 | 5 | 3 | 1 | | 2 |
| | HIST., GEOGRAPHY | 81 | 1 | 2 | 6 | 13 | 11 | 24 | 13 | 8 | | | 3 |
| | M-P-E FIELDS | 296 | 6 | 3 | 21 | 45 | 21 | 80 | 43 | 49 | 15 | | 13 |
| | MATHEMATICS | 63 | 2 | | 3 | 10 | 5 | 18 | 9 | 9 | 4 | | 3 |
| | PHYSICAL SCIENCES | 185 | | 3 | 17 | 25 | 11 | 51 | 26 | 37 | 9 | | 6 |
| | PHYSICS | 67 | | 1 | 4 | 11 | 4 | 14 | 7 | 16 | 7 | | 3 |
| | CHEMISTRY | 78 | | 2 | 9 | 10 | 5 | 29 | 10 | 9 | 2 | | 2 |
| | GEOLOGY | 40 | | | 4 | 4 | 2 | 8 | 9 | 12 | | | 1 |
| | ENGINEERING | 48 | 4 | | 1 | 10 | 5 | 11 | 8 | 3 | 2 | | 4 |
| | ALL OTHER FIELDS | 241 | 2 | 2 | 24 | 63 | 25 | 54 | 36 | 19 | 2 | | 14 |
| | LANG. & LIT. | 67 | 1 | | 4 | 17 | 6 | 22 | 7 | 5 | 1 | | 4 |
| | ARTS, HUMANITIES | 46 | | 1 | 3 | 9 | 7 | 9 | 9 | 2 | 1 | | 5 |
| | PROFESSIONS | 56 | | | 5 | 13 | 5 | 11 | 11 | 8 | | | 3 |
| | EDUCATION | 72 | 1 | 1 | 12 | 24 | 7 | 12 | 9 | 4 | | | 2 |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 41 | 21 | 97 | 327 | 147 | 443 | 277 | 179 | 38 | 3 | 54 |
| | BIO-SCIENCES, TOTAL | 418 | 12 | 5 | 24 | 88 | 34 | 123 | 66 | 36 | 8 | | 22 |
| | BASIC MED. SCIENCES | 246 | 9 | 3 | 13 | 54 | 13 | 72 | 40 | 22 | 6 | | 14 |
| | PHYSIOLOGY | 43 | | | 2 | 11 | 2 | 11 | 5 | 7 | 3 | | 2 |
| | PHARMACOLOGY | 29 | 3 | 1 | 1 | 7 | | 7 | 7 | 1 | 1 | | 1 |
| | BIOCHEMISTRY | 90 | 3 | | 6 | 20 | 5 | 24 | 13 | 11 | 1 | | 7 |
| | MICROBIOLOGY | 84 | 3 | 2 | 4 | 16 | 6 | 30 | 15 | 3 | 1 | | 4 |
| | OTHER BIO-SCIENCES | 172 | 3 | 2 | 11 | 34 | 21 | 51 | 26 | 14 | 2 | | 8 |
| | BOTANY | 71 | 1 | | 2 | 17 | 6 | 27 | 7 | 6 | 1 | | 4 |
| | GENETICS | 14 | | | 1 | 1 | 5 | 3 | 1 | 1 | | | 2 |
| | ZOOLOGY | 87 | 2 | 2 | 8 | 16 | 10 | 21 | 18 | 7 | 1 | | 2 |
| | MISC. BIOLOGY | | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 1 | 1 | 1 | 4 | 1 | 9 | 7 | 10 | | 1 | 2 |
| | AGRIC. SCIENCES | 103 | | 1 | 5 | 24 | 13 | 24 | 22 | 9 | 3 | | 2 |
| | PSYCHOLOGY | 95 | 3 | 2 | 6 | 28 | 7 | 19 | 16 | 8 | 3 | | 3 |
| | SOCIAL SCIENCES | 267 | 8 | 5 | 14 | 60 | 28 | 66 | 45 | 29 | 5 | 1 | 6 |
| | SOCIOLOGY | 61 | 1 | 3 | 3 | 18 | 4 | 17 | 8 | 4 | 1 | | 2 |
| | ECONOMICS | 54 | 3 | | 3 | 12 | 8 | 13 | 10 | 3 | 1 | | 1 |
| | POLITICAL SCIENCE | 75 | 2 | 1 | 3 | 15 | 7 | 16 | 15 | 12 | 1 | 1 | 2 |
| | HIST., GEOGRAPHY | 77 | 2 | 1 | 5 | 15 | 9 | 20 | 12 | 10 | 2 | | 1 |
| | M-P-E FIELDS | 435 | 8 | 4 | 32 | 66 | 36 | 135 | 76 | 52 | 11 | 1 | 14 |
| | MATHEMATICS | 68 | 2 | 1 | 9 | 12 | 6 | 18 | 9 | 7 | 3 | | 1 |
| | PHYSICAL SCIENCES | 271 | 4 | 2 | 17 | 33 | 21 | 88 | 54 | 35 | 7 | | 10 |
| | PHYSICS | 90 | | 1 | 6 | 10 | 7 | 25 | 17 | 16 | 4 | | 4 |
| | CHEMISTRY | 77 | 1 | 1 | 5 | 9 | 6 | 28 | 15 | 9 | 3 | | |
| | GEOLOGY | 104 | 3 | | 6 | 14 | 8 | 35 | 22 | 10 | | | 6 |
| | ENGINEERING | 96 | 2 | 1 | 6 | 21 | 9 | 29 | 13 | 10 | 1 | 1 | 3 |
| | ALL OTHER FIELDS | 272 | 9 | 3 | 15 | 57 | 28 | 67 | 45 | 35 | 8 | | 5 |
| | LANG. & LIT. | 74 | 2 | 1 | 3 | 14 | 6 | 19 | 16 | 9 | 3 | | 1 |
| | ARTS, HUMANITIES | 69 | 2 | | 3 | 11 | 5 | 16 | 13 | 17 | 1 | | 1 |
| | PROFESSIONS | 61 | 5 | 1 | 2 | 14 | 3 | 14 | 11 | 6 | 3 | | 2 |
| | EDUCATION | 68 | | 1 | 7 | 18 | 14 | 18 | 5 | 3 | 1 | | 1 |

Appendix 12, continued

## EDUCATION OF MOTHER

| COHORT | FIELD | TOTAL GROUP | NUMBER TERMINATING EDUCATION AT EACH LEVEL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NONE | GR. 1-3 | GR. 4-6 | GR. 7-8 | GR. 9-11 | H.S. GRAD | COLL 1-3 | COLL GRAD | M.D. & MA | PHD | UNK |
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 56 | 24 | 127 | 358 | 210 | 519 | 329 | 189 | 46 | 11 | 43 |
| | BIO-SCIENCES, TOTAL | 663 | 20 | 8 | 45 | 129 | 76 | 195 | 114 | 46 | 13 | 1 | 16 |
| | BASIC MED. SCIENCES | 425 | 15 | 5 | 23 | 86 | 49 | 130 | 70 | 27 | 9 | 1 | 10 |
| | PHYSIOLOGY | 123 | 2 | 1 | 8 | 26 | 11 | 40 | 24 | 7 | 1 | | 3 |
| | PHARMACOLOGY | 36 | 1 | 2 | 5 | 7 | 7 | 10 | 2 | 1 | | | 1 |
| | BIOCHEMISTRY | 139 | 7 | 1 | 4 | 30 | 13 | 37 | 22 | 13 | 7 | 1 | 4 |
| | MICROBIOLOGY | 127 | 5 | 1 | 6 | 23 | 18 | 43 | 22 | 6 | 1 | | 2 |
| | OTHER BIO-SCIENCES | 238 | 5 | 3 | 22 | 43 | 27 | 65 | 44 | 19 | 4 | | 6 |
| | BOTANY | 91 | 2 | 3 | 8 | 18 | 11 | 26 | 15 | 4 | 2 | | 2 |
| | GENETICS | 21 | 1 | | 3 | 2 | 1 | 5 | 6 | 3 | | | |
| | ZOOLOGY | 93 | 2 | | 6 | 20 | 14 | 25 | 15 | 7 | 1 | | 3 |
| | MISC. BIOLOGY | 33 | | | 5 | 3 | 1 | 9 | 8 | 5 | 1 | | 1 |
| | MEDICAL SCIENCES | 66 | 2 | | 2 | 17 | 8 | 12 | 15 | 4 | 1 | 1 | 4 |
| | AGRIC. SCIENCES | 125 | 2 | 5 | 9 | 25 | 19 | 25 | 23 | 10 | 2 | 1 | 4 |
| | PSYCHOLOGY | 73 | 4 | 1 | 5 | 11 | 4 | 27 | 11 | 7 | 2 | | 1 |
| | SOCIAL SCIENCES | 318 | 10 | 2 | 21 | 71 | 28 | 74 | 47 | 46 | 9 | 4 | 6 |
| | SOCIOLOGY | 84 | 2 | 1 | 7 | 19 | 10 | 16 | 12 | 14 | 1 | 1 | 1 |
| | ECONOMICS | 84 | 4 | 1 | 7 | 18 | 6 | 16 | 11 | 14 | 3 | 2 | 2 |
| | POLITICAL SCIENCE | 76 | 3 | | 4 | 12 | 5 | 22 | 15 | 8 | 4 | 1 | 2 |
| | HIST., GEOGRAPHY | 74 | 1 | | 3 | 22 | 7 | 20 | 9 | 10 | 1 | | 1 |
| | M-P-E FIELDS | 405 | 11 | 5 | 27 | 59 | 42 | 125 | 64 | 51 | 13 | 1 | 7 |
| | MATHEMATICS | 96 | 5 | 1 | 11 | 8 | 6 | 28 | 13 | 14 | 6 | 1 | 3 |
| | PHYSICAL SCIENCES | 222 | 3 | 4 | 12 | 33 | 25 | 71 | 38 | 26 | 6 | | 4 |
| | PHYSICS | 70 | 1 | | 6 | 7 | 5 | 22 | 16 | 8 | 3 | | 2 |
| | CHEMISTRY | 80 | 1 | 2 | 2 | 17 | 12 | 22 | 13 | 7 | 2 | | 2 |
| | GEOLOGY | 72 | 1 | 2 | 4 | 9 | 8 | 27 | 9 | 11 | 1 | | |
| | ENGINEERING | 87 | 3 | | 4 | 18 | 11 | 26 | 13 | 11 | 1 | | |
| | ALL OTHER FIELDS | 262 | 7 | 3 | 18 | 46 | 33 | 61 | 55 | 25 | 6 | 3 | 5 |
| | LANG. & LIT. | 67 | 1 | | 4 | 10 | 6 | 19 | 15 | 9 | | 1 | 2 |
| | ARTS, HUMANITIES | 64 | 1 | | 4 | 8 | 9 | 18 | 10 | 9 | 3 | 2 | |
| | PROFESSIONS | 56 | 3 | 1 | 7 | 9 | 7 | 12 | 10 | 5 | 1 | | 1 |
| | EDUCATION | 75 | 2 | 2 | 3 | 19 | 11 | 12 | 20 | 2 | 2 | | 2 |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 38 | 28 | 138 | 371 | 257 | 604 | 387 | 248 | 75 | 11 | 67 |
| | BIO-SCIENCES, TOTAL | 835 | 16 | 11 | 57 | 129 | 99 | 235 | 135 | 90 | 25 | 7 | 31 |
| | BASIC MED. SCIENCES | 502 | 10 | 8 | 36 | 80 | 56 | 151 | 78 | 48 | 14 | 4 | 17 |
| | PHYSIOLOGY | 140 | 2 | 2 | 8 | 26 | 17 | 48 | 20 | 8 | 3 | 1 | 5 |
| | PHARMACOLOGY | 30 | 2 | 2 | 1 | 3 | 7 | 10 | 2 | 3 | | | |
| | BIOCHEMISTRY | 205 | 3 | 3 | 11 | 35 | 19 | 57 | 40 | 23 | 6 | 2 | 6 |
| | MICROBIOLOGY | 127 | 3 | 1 | 16 | 16 | 13 | 36 | 16 | 14 | 5 | 1 | 6 |
| | OTHER BIO-SCIENCES | 333 | 6 | 3 | 21 | 49 | 43 | 84 | 57 | 42 | 11 | 3 | 14 |
| | BOTANY | 86 | | | 8 | 6 | 12 | 21 | 14 | 14 | 4 | 1 | 6 |
| | GENETICS | 56 | 1 | | 4 | 6 | 8 | 12 | 16 | 5 | 2 | | 2 |
| | ZOOLOGY | 103 | 3 | 2 | 6 | 23 | 8 | 25 | 14 | 14 | 3 | 1 | 4 |
| | MISC. BIOLOGY | 88 | 2 | 1 | 3 | 14 | 15 | 26 | 13 | 9 | 2 | 1 | 2 |
| | MEDICAL SCIENCES | 55 | 2 | 1 | 3 | 14 | 6 | 11 | 8 | 8 | 1 | | 1 |
| | AGRIC. SCIENCES | 92 | 2 | 2 | 5 | 21 | 9 | 25 | 23 | 2 | 1 | | 2 |
| | PSYCHOLOGY | 80 | | | 7 | 12 | 10 | 27 | 11 | 7 | 4 | | 2 |
| | SOCIAL SCIENCES | 364 | 8 | 8 | 21 | 63 | 39 | 90 | 69 | 41 | 17 | 1 | 7 |
| | SOCIOLOGY | 97 | 2 | | 10 | 21 | 8 | 19 | 17 | 11 | 7 | | 2 |
| | ECONOMICS | 82 | 1 | 3 | 1 | 20 | 11 | 24 | 12 | 7 | 2 | 1 | |
| | POLITICAL SCIENCE | 85 | 1 | 3 | 4 | 11 | 7 | 24 | 20 | 10 | 3 | | 2 |
| | HIST., GEOGRAPHY | 100 | 4 | 2 | 6 | 11 | 13 | 23 | 20 | 13 | 5 | | 3 |
| | M-P-E FIELDS | 434 | 7 | 1 | 24 | 59 | 50 | 126 | 80 | 54 | 17 | 2 | 14 |
| | MATHEMATICS | 100 | 2 | 1 | 5 | 16 | 8 | 28 | 17 | 14 | 3 | 2 | 4 |
| | PHYSICAL SCIENCES | 240 | 4 | | 10 | 23 | 27 | 77 | 48 | 33 | 10 | | 8 |
| | PHYSICS | 69 | 2 | | 2 | 7 | 5 | 24 | 13 | 6 | 6 | | 4 |
| | CHEMISTRY | 90 | 1 | | 5 | 12 | 11 | 32 | 11 | 15 | 1 | | 2 |
| | GEOLOGY | 81 | 1 | | 3 | 4 | 11 | 21 | 24 | 12 | 3 | | 2 |
| | ENGINEERING | 94 | 1 | | 9 | 20 | 15 | 21 | 15 | 7 | 4 | | 2 |
| | ALL OTHER FIELDS | 364 | 3 | 5 | 21 | 73 | 44 | 90 | 61 | 46 | 10 | 1 | 10 |
| | LANG. & LIT. | 96 | | 3 | 2 | 18 | 13 | 23 | 16 | 12 | 5 | 1 | 3 |
| | ARTS, HUMANITIES | 78 | | 1 | 5 | 13 | 8 | 18 | 13 | 16 | 2 | | 2 |
| | PROFESSIONS | 102 | 2 | | 7 | 17 | 11 | 33 | 17 | 11 | | | 4 |
| | EDUCATION | 88 | 1 | 1 | 7 | 25 | 12 | 16 | 15 | 7 | 3 | | 1 |

## Appendix 13

## OCCUPATIONAL LEVEL OF FATHER

| COHORT | FIELD | TOTAL GROUP | COLL TCHR | OTHER PROF | MNGR | FARM | SLS. SVC. | CLER | SKLD LABR | SEMI SKLD | UN-SKLD | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 10017 | 551 | 2257 | 1815 | 1566 | 1124 | 440 | 1380 | 523 | 243 | 118 |
| COHORT 1935 | TOTAL, ALL FIELDS | 1355 | 87 | 304 | 254 | 279 | 119 | 57 | 161 | 49 | 20 | 25 |
| | BIO-SCIENCES, TOTAL | 352 | 16 | 67 | 59 | 89 | 31 | 13 | 47 | 18 | 6 | 6 |
| | BASIC MED. SCIENCES | 181 | 8 | 35 | 34 | 39 | 17 | 7 | 23 | 12 | 4 | 2 |
| | PHYSIOLOGY | 80 | 7 | 16 | 16 | 17 | 7 | 1 | 8 | 5 | 2 | 1 |
| | PHARMACOLOGY | 15 | | 1 | 1 | 4 | 3 | 1 | 4 | 1 | | |
| | BIOCHEMISTRY | 35 | 1 | 8 | 6 | 7 | 3 | 2 | 4 | 3 | 1 | |
| | MICROBIOLOGY | 51 | | 10 | 11 | 11 | 4 | 3 | 7 | 3 | 1 | 1 |
| | OTHER BIO-SCIENCES | 171 | 8 | 32 | 25 | 50 | 14 | 6 | 24 | 6 | 2 | 4 |
| | BOTANY | 59 | 4 | 11 | 6 | 20 | 7 | 2 | 5 | 2 | | 2 |
| | GENETICS | 19 | | 1 | 5 | 6 | 3 | 1 | 1 | | 1 | 1 |
| | ZOOLOGY | 63 | 3 | 11 | 9 | 16 | 2 | 3 | 13 | 4 | 1 | 1 |
| | MISC. BIOLOGY | 30 | 1 | 9 | 5 | 8 | 2 | | 5 | | | |
| | MEDICAL SCIENCES | 39 | 2 | 10 | 7 | 6 | 6 | 1 | 3 | 2 | 1 | 1 |
| | AGRIC. SCIENCES | 77 | 3 | 10 | 9 | 37 | 4 | 1 | 7 | 2 | 1 | 3 |
| | PSYCHOLOGY | 61 | 5 | 20 | 11 | 6 | 8 | 1 | 6 | 3 | 1 | |
| | SOCIAL SCIENCES | 254 | 23 | 64 | 54 | 53 | 20 | 8 | 18 | 4 | 4 | 6 |
| | SOCIOLOGY | 78 | 6 | 19 | 24 | 11 | 8 | 2 | 5 | 1 | | 2 |
| | ECONOMICS | 56 | 6 | 13 | 7 | 15 | 2 | 3 | 6 | | 1 | 3 |
| | POLITICAL SCIENCE | 61 | 3 | 16 | 15 | 18 | 2 | 2 | 2 | 1 | 2 | |
| | HIST., GEOGRAPHY | 59 | 8 | 16 | 8 | 9 | 8 | 1 | 5 | 2 | 1 | 1 |
| | M-P-E FIELDS | 346 | 25 | 76 | 69 | 52 | 34 | 20 | 52 | 12 | 3 | 3 |
| | MATHEMATICS | 69 | 3 | 13 | 10 | 12 | 11 | 2 | 13 | 3 | 1 | 1 |
| | PHYSICAL SCIENCES | 206 | 19 | 52 | 39 | 32 | 18 | 11 | 25 | 9 | | 1 |
| | PHYSICS | 71 | 8 | 14 | 9 | 11 | 7 | 5 | 14 | 2 | | 1 |
| | CHEMISTRY | 76 | 5 | 23 | 16 | 13 | 5 | 3 | 5 | 6 | | |
| | GEOLOGY | 59 | 6 | 15 | 14 | 8 | 6 | 3 | 6 | 1 | | |
| | ENGINEERING | 71 | 3 | 11 | 20 | 8 | 5 | 7 | 14 | | 2 | 1 |
| | ALL OTHER FIELDS | 226 | 13 | 57 | 45 | 36 | 16 | 13 | 28 | 8 | 4 | 6 |
| | LANG. & LIT. | 77 | 1 | 22 | 13 | 9 | 7 | 7 | 11 | 4 | 2 | 1 |
| | ARTS, HUMANITIES | 60 | 7 | 14 | 18 | 7 | 3 | 1 | 5 | 2 | 2 | 1 |
| | PROFESSIONS | 48 | 3 | 13 | 8 | 8 | 5 | 2 | 5 | 1 | | 3 |
| | EDUCATION | 41 | 2 | 8 | 6 | 12 | 1 | 3 | 7 | 1 | | 1 |
| COHORT 1940 | TOTAL, ALL FIELDS | 1610 | 107 | 367 | 300 | 299 | 148 | 66 | 205 | 68 | 30 | 20 |
| | BIO-SCIENCES, TOTAL | 570 | 40 | 115 | 91 | 107 | 60 | 25 | 89 | 27 | 9 | 7 |
| | BASIC MED. SCIENCES | 378 | 26 | 78 | 58 | 61 | 43 | 15 | 66 | 18 | 7 | 6 |
| | PHYSIOLOGY | 112 | 9 | 23 | 21 | 12 | 17 | 2 | 17 | 7 | 2 | 2 |
| | PHARMACOLOGY | 25 | 1 | 5 | 2 | 2 | 6 | 2 | 4 | | 3 | |
| | BIOCHEMISTRY | 155 | 13 | 35 | 27 | 24 | 13 | 7 | 26 | 6 | 2 | 2 |
| | MICROBIOLOGY | 86 | 3 | 15 | 8 | 23 | 7 | 4 | 19 | 5 | | 2 |
| | OTHER BIO-SCIENCES | 192 | 14 | 37 | 33 | 46 | 17 | 10 | 23 | 9 | 2 | 1 |
| | BOTANY | 69 | 8 | 12 | 13 | 16 | 4 | 4 | 9 | 2 | | 1 |
| | GENETICS | 32 | 3 | 6 | 2 | 15 | 2 | 2 | 2 | | | |
| | ZOOLOGY | 90 | 3 | 19 | 17 | 15 | 11 | 4 | 12 | 7 | 2 | |
| | MISC. BIOLOGY | 1 | | | 1 | | | | | | | |
| | MEDICAL SCIENCES | 31 | 2 | 10 | 5 | 2 | 3 | 2 | 6 | 1 | | |
| | AGRIC. SCIENCES | 74 | 2 | 8 | 11 | 38 | 4 | 1 | 6 | 3 | | 1 |
| | PSYCHOLOGY | 83 | 9 | 32 | 15 | 5 | 6 | 2 | 8 | 2 | 2 | 2 |
| | SOCIAL SCIENCES | 252 | 13 | 64 | 55 | 59 | 18 | 7 | 22 | 8 | 3 | 3 |
| | SOCIOLOGY | 65 | 6 | 11 | 19 | 11 | 4 | 4 | 6 | 3 | 1 | |
| | ECONOMICS | 80 | | 18 | 19 | 26 | 5 | 2 | 6 | 2 | | 2 |
| | POLITICAL SCIENCE | 49 | 2 | 12 | 10 | 12 | 6 | | 4 | 2 | 1 | |
| | HIST., GEOGRAPHY | 58 | 5 | 23 | 7 | 10 | 3 | 1 | 6 | 1 | 1 | 1 |
| | M-P-E FIELDS | 367 | 30 | 77 | 76 | 51 | 40 | 19 | 48 | 17 | 9 | |
| | MATHEMATICS | 62 | 6 | 11 | 16 | 6 | 8 | 3 | 7 | 4 | 1 | |
| | PHYSICAL SCIENCES | 238 | 24 | 53 | 46 | 37 | 26 | 14 | 24 | 8 | 6 | |
| | PHYSICS | 69 | 11 | 22 | 10 | 8 | 1 | 5 | 4 | 4 | | |
| | CHEMISTRY | 92 | 5 | 16 | 20 | 13 | 16 | 6 | 13 | 2 | 1 | |
| | GEOLOGY | 77 | 8 | 15 | 16 | 16 | 9 | 3 | 7 | 2 | 1 | |
| | ENGINEERING | 67 | | 13 | 14 | 8 | 6 | 2 | 17 | 5 | 2 | |
| | ALL OTHER FIELDS | 233 | 11 | 61 | 47 | 37 | 17 | 10 | 26 | 10 | 7 | 7 |
| | LANG. & LIT. | 76 | 4 | 18 | 15 | 9 | 7 | 3 | 10 | 4 | 2 | 4 |
| | ARTS, HUMANITIES | 62 | | 22 | 13 | 5 | 7 | 3 | 6 | 2 | 3 | 1 |
| | PROFESSIONS | 43 | 6 | 12 | 7 | 5 | 3 | 1 | 3 | 4 | 1 | 1 |
| | EDUCATION | 52 | 1 | 9 | 12 | 18 | | 3 | 7 | | 1 | 1 |

Appendix 13, continued

## OCCUPATIONAL LEVEL OF FATHER

| COHORT | FIELD | TOTAL GROUP | COLL TCHR | OTHER PROF | MNGR | FARM | SLS. SVC. | CLER | SKLD LABR | SEMI SKLD | UN-SKLD | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 1289 | 79 | 298 | 230 | 210 | 132 | 60 | 177 | 66 | 26 | 11 |
| | BIO-SCIENCES, TOTAL | 328 | 26 | 59 | 48 | 71 | 35 | 13 | 48 | 17 | 8 | 3 |
| | BASIC MED. SCIENCES | 156 | 10 | 31 | 22 | 29 | 22 | 6 | 20 | 11 | 3 | 2 |
| | PHYSIOLOGY | 36 | 3 | 7 | 7 | 7 | 4 | 3 | 2 | 2 | 1 | |
| | PHARMACOLOGY | 18 | | 3 | 4 | 4 | 3 | 1 | 1 | | 2 | |
| | BIOCHEMISTRY | 64 | 5 | 12 | 8 | 12 | 7 | | 15 | 4 | | 1 |
| | MICROBIOLOGY | 38 | 2 | 9 | 3 | 6 | 8 | 2 | 2 | 5 | | 1 |
| | OTHER BIO-SCIENCES | 172 | 16 | 28 | 26 | 42 | 13 | 7 | 28 | 6 | 5 | 1 |
| | BOTANY | 69 | 8 | 12 | 8 | 18 | 6 | 1 | 11 | 2 | 3 | |
| | GENETICS | 13 | 1 | 2 | | 8 | | | 2 | | | |
| | ZOOLOGY | 89 | 7 | 14 | 17 | 16 | 7 | 6 | 15 | 4 | 2 | 1 |
| | MISC. BIOLOGY | 1 | | | 1 | | | | | | | |
| | MEDICAL SCIENCES | 26 | 1 | 9 | 2 | 2 | 5 | | 3 | 4 | | |
| | AGRIC. SCIENCES | 65 | 3 | 6 | 4 | 28 | 5 | 4 | 12 | 2 | 1 | |
| | PSYCHOLOGY | 76 | 3 | 17 | 18 | 4 | 11 | 4 | 11 | 3 | 4 | 1 |
| | SOCIAL SCIENCES | 257 | 14 | 65 | 54 | 41 | 27 | 7 | 28 | 14 | 5 | 2 |
| | SOCIOLOGY | 64 | 5 | 20 | 15 | 8 | 3 | 3 | 8 | 1 | 1 | |
| | ECONOMICS | 80 | 5 | 14 | 18 | 21 | 11 | 1 | 5 | 4 | | 1 |
| | POLITICAL SCIENCE | 32 | 1 | 6 | 9 | 3 | 4 | 2 | 3 | 2 | 1 | 1 |
| | HIST., GEOGRAPHY | 81 | 3 | 25 | 12 | 9 | 9 | 1 | 12 | 7 | 3 | |
| | M-P-E FIELDS | 296 | 25 | 75 | 61 | 20 | 29 | 23 | 40 | 13 | 6 | 4 |
| | MATHEMATICS | 63 | 5 | 18 | 17 | 4 | 7 | 4 | 4 | 2 | 1 | 1 |
| | PHYSICAL SCIENCES | 185 | 17 | 49 | 31 | 15 | 17 | 14 | 29 | 8 | 3 | 2 |
| | PHYSICS | 67 | 9 | 23 | 7 | 5 | 4 | 7 | 7 | 2 | 2 | 1 |
| | CHEMISTRY | 78 | 3 | 13 | 19 | 8 | 10 | 5 | 14 | 5 | 1 | |
| | GEOLOGY | 40 | 5 | 13 | 5 | 2 | 3 | 2 | 8 | 1 | | 1 |
| | ENGINEERING | 48 | 3 | 8 | 13 | 1 | 5 | 5 | 7 | 3 | 2 | 1 |
| | ALL OTHER FIELDS | 241 | 7 | 67 | 43 | 44 | 20 | 9 | 35 | 13 | 2 | 1 |
| | LANG. & LIT. | 67 | 3 | 17 | 14 | 9 | 6 | 4 | 8 | 5 | | 1 |
| | ARTS, HUMANITIES | 46 | 1 | 18 | 9 | 8 | 2 | 2 | 5 | | 1 | |
| | PROFESSIONS | 56 | 2 | 19 | 9 | 10 | 4 | | 8 | 4 | | |
| | EDUCATION | 72 | 1 | 13 | 11 | 17 | 8 | 3 | 14 | 4 | 1 | |
| COHORT 1950 | TOTAL, ALL FIELDS | 1627 | 86 | 368 | 266 | 254 | 227 | 66 | 228 | 84 | 35 | 13 |
| | BIO-SCIENCES, TOTAL | 418 | 19 | 77 | 58 | 74 | 61 | 18 | 71 | 24 | 12 | 4 |
| | BASIC MED. SCIENCES | 246 | 11 | 38 | 41 | 32 | 41 | 10 | 41 | 18 | 10 | 4 |
| | PHYSIOLOGY | 43 | 3 | 15 | 6 | 4 | 6 | | 6 | 1 | 2 | |
| | PHARMACOLOGY | 29 | 1 | 5 | 4 | 3 | 3 | 3 | 4 | 4 | 2 | |
| | BIOCHEMISTRY | 90 | 6 | 8 | 10 | 13 | 21 | 2 | 16 | 7 | 4 | 3 |
| | MICROBIOLOGY | 84 | 1 | 10 | 21 | 12 | 11 | 5 | 15 | 6 | 2 | 1 |
| | OTHER BIO-SCIENCES | 172 | 8 | 39 | 17 | 42 | 20 | 8 | 30 | 6 | 2 | |
| | BOTANY | 71 | 3 | 16 | 8 | 17 | 9 | 3 | 14 | 1 | | |
| | GENETICS | 14 | 1 | 1 | | 11 | | | | 1 | | |
| | ZOOLOGY | 87 | 4 | 22 | 9 | 14 | 11 | 5 | 16 | 4 | 2 | |
| | MISC. BIOLOGY | | | | | | | | | | | |
| | MEDICAL SCIENCES | 37 | 3 | 16 | 3 | 6 | 7 | | 2 | | | |
| | AGRIC. SCIENCES | 103 | 5 | 11 | 8 | 62 | 7 | | 9 | | 1 | |
| | PSYCHOLOGY | 95 | 4 | 17 | 14 | 11 | 13 | 4 | 21 | 7 | 4 | |
| | SOCIAL SCIENCES | 267 | 17 | 62 | 62 | 36 | 37 | 10 | 28 | 12 | 3 | |
| | SOCIOLOGY | 61 | 4 | 12 | 19 | 6 | 8 | 1 | 7 | 4 | | |
| | ECONOMICS | 54 | 4 | 9 | 9 | 15 | 6 | 3 | 6 | 2 | | |
| | POLITICAL SCIENCE | 75 | 4 | 25 | 12 | 5 | 15 | 3 | 6 | 4 | 1 | |
| | HIST., GEOGRAPHY | 77 | 5 | 16 | 22 | 10 | 8 | 3 | 9 | 2 | 2 | |
| | M-P-E FIELDS | 435 | 27 | 117 | 66 | 38 | 62 | 22 | 61 | 28 | 7 | 7 |
| | MATHEMATICS | 68 | 2 | 21 | 10 | 7 | 12 | 2 | 6 | 6 | 1 | 1 |
| | PHYSICAL SCIENCES | 271 | 21 | 72 | 44 | 20 | 38 | 13 | 36 | 17 | 5 | 5 |
| | PHYSICS | 90 | 6 | 22 | 15 | 12 | 15 | 6 | 9 | 5 | | |
| | CHEMISTRY | 77 | 5 | 16 | 11 | 6 | 10 | 3 | 15 | 8 | 3 | |
| | GEOLOGY | 104 | 10 | 34 | 18 | 2 | 13 | 4 | 12 | 4 | 2 | 5 |
| | ENGINEERING | 96 | 4 | 24 | 12 | 11 | 12 | 7 | 19 | 5 | 1 | 1 |
| | ALL OTHER FIELDS | 272 | 11 | 68 | 55 | 27 | 40 | 12 | 36 | 13 | 8 | 2 |
| | LANG. & LIT. | 74 | 3 | 24 | 15 | 3 | 16 | 1 | 6 | 2 | 4 | |
| | ARTS, HUMANITIES | 69 | 5 | 22 | 15 | 3 | 9 | 4 | 8 | 2 | 1 | |
| | PROFESSIONS | 61 | 3 | 12 | 16 | 7 | 5 | 3 | 8 | 5 | | 2 |
| | EDUCATION | 68 | | 10 | 9 | 14 | 10 | 4 | 14 | 4 | 3 | |

Appendix 13, continued

## OCCUPATIONAL LEVEL OF FATHER

| COHORT | FIELD | TOTAL GROUP | COLL TCHR | OTHER PROF | MNGR | FARM | SLS. SVC. | CLER | SKLD LABR | SEMI SKLD | UN-SKLD | UNK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT 1955 | TOTAL, ALL FIELDS | 1912 | 84 | 408 | 356 | 254 | 229 | 82 | 304 | 116 | 54 | 25 |
| | BIO-SCIENCES, TOTAL | 663 | 31 | 128 | 115 | 69 | 84 | 29 | 127 | 41 | 25 | 14 |
| | BASIC MED. SCIENCES | 425 | 16 | 81 | 77 | 42 | 58 | 18 | 79 | 24 | 18 | 12 |
| | PHYSIOLOGY | 123 | 7 | 24 | 23 | 9 | 16 | 3 | 24 | 8 | 5 | 4 |
| | PHARMACOLOGY | 36 | | 4 | 7 | 4 | 6 | | 5 | 4 | 6 | |
| | BIOCHEMISTRY | 139 | 6 | 28 | 25 | 20 | 19 | 5 | 23 | 6 | 3 | 4 |
| | MICROBIOLOGY | 127 | 3 | 25 | 22 | 9 | 17 | 10 | 27 | 6 | 4 | 4 |
| | OTHER BIO-SCIENCES | 238 | 15 | 47 | 38 | 27 | 26 | 11 | 48 | 17 | 7 | 2 |
| | BOTANY | 91 | 6 | 11 | 17 | 18 | 6 | 7 | 17 | 5 | 3 | 1 |
| | GENETICS | 21 | 3 | 4 | 3 | 5 | | | 4 | 2 | | |
| | ZOOLOGY | 93 | 5 | 24 | 12 | 3 | 16 | 3 | 17 | 8 | 4 | 1 |
| | MISC. BIOLOGY | 33 | 1 | 8 | 6 | 1 | 4 | 1 | 10 | 2 | | |
| | MEDICAL SCIENCES | 66 | 1 | 19 | 10 | 9 | 8 | 1 | 9 | 5 | 2 | 2 |
| | AGRIC. SCIENCES | 125 | 3 | 16 | 13 | 59 | 8 | 4 | 10 | 10 | 1 | 1 |
| | PSYCHOLOGY | 73 | 4 | 16 | 17 | 4 | 11 | 1 | 15 | 3 | 2 | |
| | SOCIAL SCIENCES | 318 | 15 | 73 | 57 | 46 | 36 | 16 | 47 | 21 | 5 | 2 |
| | SOCIOLOGY | 84 | 2 | 21 | 17 | 9 | 7 | 4 | 18 | 5 | 1 | |
| | ECONOMICS | 84 | 9 | 13 | 16 | 20 | 11 | 2 | 8 | 3 | 2 | |
| | POLITICAL SCIENCE | 76 | 3 | 21 | 11 | 10 | 9 | 6 | 4 | 9 | 2 | 1 |
| | HIST., GEOGRAPHY | 74 | 1 | 18 | 13 | 7 | 9 | 4 | 17 | 4 | | 1 |
| | M-P-E FIELDS | 405 | 18 | 97 | 84 | 36 | 51 | 18 | 59 | 28 | 12 | 2 |
| | MATHEMATICS | 96 | 8 | 23 | 23 | 9 | 9 | 3 | 10 | 6 | 3 | 2 |
| | PHYSICAL SCIENCES | 222 | 9 | 58 | 34 | 22 | 31 | 9 | 36 | 16 | 7 | |
| | PHYSICS | 70 | 4 | 20 | 18 | 4 | 8 | 2 | 7 | 7 | | |
| | CHEMISTRY | 80 | 2 | 18 | 9 | 8 | 13 | 5 | 14 | 8 | 3 | |
| | GEOLOGY | 72 | 3 | 20 | 7 | 10 | 10 | 2 | 15 | 1 | 4 | |
| | ENGINEERING | 87 | 1 | 16 | 27 | 5 | 11 | 6 | 13 | 6 | 2 | |
| | ALL OTHER FIELDS | 262 | 12 | 59 | 60 | 31 | 31 | 13 | 37 | 8 | 7 | 4 |
| | LANG. & LIT. | 67 | 2 | 15 | 15 | 7 | 9 | 5 | 7 | 3 | 2 | 2 |
| | ARTS, HUMANITIES | 64 | 8 | 13 | 15 | 6 | 10 | 2 | 5 | 2 | 3 | |
| | PROFESSIONS | 56 | 1 | 14 | 12 | 5 | 6 | 4 | 10 | 2 | 1 | 1 |
| | EDUCATION | 75 | 1 | 17 | 18 | 13 | 6 | 2 | 15 | 1 | 1 | 1 |
| COHORT 1960 | TOTAL, ALL FIELDS | 2224 | 108 | 512 | 409 | 270 | 269 | 109 | 305 | 140 | 78 | 24 |
| | BIO-SCIENCES, TOTAL | 835 | 43 | 200 | 134 | 109 | 106 | 38 | 111 | 51 | 32 | 11 |
| | BASIC MED. SCIENCES | 502 | 26 | 107 | 86 | 62 | 71 | 25 | 68 | 30 | 21 | 6 |
| | PHYSIOLOGY | 140 | 5 | 34 | 26 | 20 | 23 | 8 | 12 | 6 | 5 | 1 |
| | PHARMACOLOGY | 30 | | 6 | 4 | 3 | 5 | 2 | 7 | 2 | 1 | |
| | BIOCHEMISTRY | 205 | 14 | 47 | 36 | 24 | 24 | 9 | 27 | 15 | 8 | 1 |
| | MICROBIOLOGY | 127 | 7 | 20 | 20 | 15 | 19 | 6 | 22 | 7 | 7 | 4 |
| | OTHER BIO-SCIENCES | 333 | 17 | 93 | 48 | 47 | 35 | 13 | 43 | 21 | 11 | 5 |
| | BOTANY | 86 | 8 | 25 | 12 | 13 | 9 | 2 | 9 | 4 | 2 | 2 |
| | GENETICS | 56 | 1 | 16 | 5 | 16 | 3 | 3 | 6 | 3 | 2 | 1 |
| | ZOOLOGY | 103 | 4 | 25 | 20 | 8 | 12 | 5 | 18 | 8 | 2 | 1 |
| | MISC. BIOLOGY | 88 | 4 | 27 | 11 | 10 | 11 | 3 | 10 | 6 | 5 | 1 |
| | MEDICAL SCIENCES | 55 | 1 | 15 | 9 | 6 | 7 | 3 | 7 | 4 | 3 | |
| | AGRIC. SCIENCES | 92 | 2 | 13 | 9 | 38 | 8 | 4 | 10 | 5 | 3 | |
| | PSYCHOLOGY | 80 | 4 | 20 | 20 | 3 | 12 | 3 | 9 | 4 | 4 | 1 |
| | SOCIAL SCIENCES | 364 | 29 | 83 | 76 | 37 | 45 | 16 | 48 | 18 | 10 | 2 |
| | SOCIOLOGY | 97 | 10 | 24 | 15 | 2 | 14 | 6 | 18 | 5 | 2 | 1 |
| | ECONOMICS | 82 | 7 | 14 | 20 | 23 | 5 | 1 | 7 | 4 | 1 | |
| | POLITICAL SCIENCE | 85 | 4 | 23 | 21 | 5 | 15 | 3 | 8 | 3 | 3 | |
| | HIST., GEOGRAPHY | 100 | 8 | 22 | 20 | 7 | 11 | 6 | 15 | 6 | 4 | 1 |
| | M-P-E FIELDS | 434 | 15 | 109 | 77 | 30 | 49 | 33 | 66 | 33 | 16 | 6 |
| | MATHEMATICS | 100 | 6 | 28 | 14 | 4 | 17 | 4 | 17 | 7 | 3 | |
| | PHYSICAL SCIENCES | 240 | 7 | 66 | 50 | 18 | 19 | 16 | 30 | 23 | 8 | 3 |
| | PHYSICS | 69 | 4 | 19 | 17 | 4 | 6 | 6 | 6 | 5 | 2 | |
| | CHEMISTRY | 90 | | 18 | 14 | 9 | 8 | 5 | 16 | 14 | 4 | 2 |
| | GEOLOGY | 81 | 3 | 29 | 19 | 5 | 5 | 5 | 8 | 4 | 2 | 1 |
| | ENGINEERING | 94 | 2 | 15 | 13 | 8 | 13 | 13 | 19 | 3 | 5 | 3 |
| | ALL OTHER FIELDS | 364 | 14 | 72 | 84 | 47 | 42 | 12 | 54 | 25 | 10 | 4 |
| | LANG. & LIT. | 96 | 3 | 23 | 25 | 9 | 8 | 2 | 17 | 7 | 2 | |
| | ARTS, HUMANITIES | 78 | 6 | 15 | 20 | 5 | 11 | 4 | 11 | 5 | | 1 |
| | PROFESSIONS | 102 | 1 | 18 | 27 | 9 | 16 | 5 | 13 | 10 | 2 | 1 |
| | EDUCATION | 88 | 4 | 16 | 12 | 24 | 7 | 1 | 13 | 3 | 6 | 2 |

Appendix 14

## 14A. RELATION OF EDUCATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

| Educ. Level of Father | Numbers and Per cent Distribution | | | | | Computation of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other |
| **Basic Medical Sciences** | | | | | | | | | | | |
| Total | 1815 | 985 | 188 | 311 | 331 | Expected | 1815.0 | 985.0 | 188.0 | 311.0 | 331.0 |
| | 100.0 | 54.3 | 10.4 | 17.1 | 18.2 | Chi Sq. | 49.2 | 8.1 | 27.7 | 8.0 | 5.3 |
| None | 63 | 26 | 18 | 10 | 9 | Expected | 63.0 | 34.2 | 6.5 | 10.8 | 11.5 |
| | 100.0 | 41.3 | 28.6 | 15.9 | 14.3 | Chi Sq. | 22.7 | 2.0 | 20.2 | 0.1 | 0.5 |
| Grades | 26 | 16 | 2 | 4 | 4 | Expected | 26.0 | 14.1 | 2.7 | 4.5 | 4.7 |
| 1-3 | 100.0 | 61.5 | 7.7 | 15.4 | 15.4 | Chi Sq. | 0.6 | 0.3 | 0.2 | 0.0 | 0.1 |
| Grades | 176 | 94 | 20 | 26 | 36 | Expected | 176.0 | 95.5 | 18.2 | 30.2 | 32.1 |
| 4-6 | 100.0 | 53.4 | 11.4 | 14.8 | 20.5 | Chi Sq. | 1.2 | 0.0 | 0.2 | 0.6 | 0.5 |
| Grades | 416 | 204 | 49 | 84 | 79 | Expected | 416.0 | 225.8 | 43.1 | 71.3 | 75.9 |
| 7-8 | 100.0 | 49.0 | 11.8 | 20.2 | 19.0 | Chi Sq. | 5.3 | 2.1 | 0.8 | 2.3 | 0.1 |
| H. S. | 178 | 107 | 16 | 30 | 25 | Expected | 178.0 | 96.6 | 18.4 | 30.5 | 32.5 |
| 1-3 | 100.0 | 60.1 | 9.0 | 16.9 | 14.0 | Chi Sq. | 3.2 | 1.1 | 0.3 | 0.0 | 1.7 |
| H. S. | 340 | 177 | 37 | 62 | 64 | Expected | 340.0 | 184.5 | 35.2 | 58.3 | 62.0 |
| Grad. | 100.0 | 52.1 | 10.9 | 18.2 | 18.8 | Chi Sq. | 0.7 | 0.3 | 0.1 | 0.2 | 0.1 |
| Coll. | 168 | 98 | 14 | 32 | 24 | Expected | 168.0 | 91.2 | 17.4 | 28.8 | 30.6 |
| 1-3 | 100.0 | 58.3 | 8.3 | 19.0 | 14.3 | Chi Sq. | 3.0 | 0.5 | 0.7 | 0.4 | 1.4 |
| Coll. | 226 | 129 | 13 | 38 | 46 | Expected | 226.0 | 122.7 | 23.4 | 38.7 | 41.2 |
| Grad. | 100.0 | 57.1 | 5.8 | 16.8 | 20.4 | Chi Sq. | 5.5 | 0.3 | 4.6 | 0.0 | 0.6 |
| Beyond | 222 | 134 | 19 | 25 | 44 | Expected | 222.0 | 120.5 | 23.0 | 38.0 | 40.5 |
| B. A. | 100.0 | 60.4 | 8.6 | 11.3 | 19.8 | Chi Sq. | 7.0 | 1.5 | 0.7 | 4.5 | 0.3 |
| **All Other Bio-Sciences** | | | | | | | | | | | |
| Total | 1993 | 1204 | 234 | 174 | 381 | Expected | 1993.0 | 1204.0 | 234.0 | 174.0 | 381.0 |
| | 100.0 | 60.4 | 11.7 | 8.7 | 19.1 | Chi Sq. | 49.7 | 8.0 | 7.5 | 5.2 | 29.0 |
| None | 34 | 13 | 1 | 5 | 15 | Expected | 34.0 | 20.5 | 4.0 | 3.0 | 6.5 |
| | 100.0 | 38.2 | 2.9 | 14.7 | 44.1 | Chi Sq. | 17.5 | 2.8 | 2.2 | 1.4 | 11.1 |
| Grades | 64 | 38 | 7 | 8 | 11 | Expected | 64.0 | 38.7 | 7.5 | 5.6 | 12.2 |
| 1-3 | 100.0 | 59.4 | 10.9 | 12.5 | 17.2 | Chi Sq. | 1.2 | 0.0 | 0.0 | 1.0 | 0.1 |
| Grades | 192 | 114 | 21 | 20 | 37 | Expected | 192.0 | 116.0 | 22.5 | 16.8 | 36.7 |
| 4-6 | 100.0 | 59.4 | 10.9 | 10.4 | 19.3 | Chi Sq. | 0.8 | 0.0 | 0.1 | 0.6 | 0.0 |
| Grades | 439 | 273 | 60 | 38 | 68 | Expected | 439.0 | 265.2 | 51.5 | 38.3 | 83.9 |
| 7-8 | 100.0 | 62.2 | 13.7 | 8.7 | 15.5 | Chi Sq. | 4.6 | 0.2 | 1.4 | 0.0 | 3.0 |
| H. S. | 205 | 110 | 30 | 18 | 47 | Expected | 205.0 | 123.8 | 24.1 | 17.9 | 39.2 |
| 1-3 | 100.0 | 53.7 | 14.6 | 8.8 | 22.9 | Chi Sq. | 4.6 | 1.5 | 1.5 | 0.0 | 1.6 |
| H. S. | 344 | 213 | 35 | 32 | 64 | Expected | 344.0 | 207.8 | 40.4 | 30.0 | 65.8 |
| Grad. | 100.0 | 61.9 | 10.2 | 9.3 | 18.6 | Chi Sq. | 1.0 | 0.1 | 0.7 | 0.1 | 0.0 |
| Coll. | 214 | 149 | 25 | 16 | 24 | Expected | 214.0 | 129.3 | 25.1 | 18.7 | 40.9 |
| 1-3 | 100.0 | 69.6 | 11.7 | 7.5 | 11.2 | Chi Sq. | 10.4 | 3.0 | 0.0 | 0.4 | 7.0 |
| Coll. | 224 | 132 | 29 | 19 | 44 | Expected | 224.0 | 135.3 | 26.3 | 19.6 | 42.8 |
| Grad. | 100.0 | 58.9 | 12.9 | 8.5 | 19.6 | Chi Sq. | 0.4 | 0.1 | 0.3 | 0.0 | 0.0 |
| Beyond | 277 | 162 | 26 | 18 | 71 | Expected | 277.0 | 167.3 | 32.5 | 24.2 | 53.0 |
| B. A. | 100.0 | 58.5 | 9.4 | 6.5 | 25.6 | Chi Sq. | 9.2 | 0.2 | 1.3 | 1.6 | 6.1 |

Appendix 14, continued

## 14B. RELATION OF EDUCATION OF MOTHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

| Educ. Level of Mother | Numbers and Per cent Distribution | | | | | Computation of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other |
| **Basic Medical Sciences** | | | | | | | | | | | |
| Total | 1808 | 982 | 188 | 312 | 326 | Expected | 1808.0 | 982.0 | 188.0 | 312.0 | 326.0 |
| | 100.0 | 54.3 | 10.4 | 17.3 | 18.0 | Chi Sq. | 41.9 | 7.6 | 21.3 | 7.4 | 5.6 |
| None | 58 | 23 | 14 | 11 | 10 | Expected | 58.0 | 31.5 | 6.0 | 10.0 | 10.5 |
| | 100.0 | 39.7 | 24.1 | 19.0 | 17.2 | Chi Sq. | 12.9 | 2.3 | 10.5 | 0.1 | 0.0 |
| Grades 1-3 | 23 | 8 | 6 | 3 | 6 | Expected | 23.0 | 12.5 | 2.4 | 4.0 | 4.1 |
| | 100.0 | 34.8 | 26.1 | 13.0 | 26.1 | Chi Sq. | 8.1 | 1.6 | 5.4 | 0.2 | 0.8 |
| Grades 4-6 | 124 | 65 | 14 | 22 | 23 | Expected | 124.0 | 67.3 | 12.9 | 21.4 | 22.4 |
| | 100.0 | 52.4 | 11.3 | 17.7 | 18.5 | Chi Sq. | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Grades 7-8 | 398 | 202 | 45 | 72 | 79 | Expected | 398.0 | 216.2 | 41.4 | 68.7 | 71.8 |
| | 100.0 | 50.8 | 11.3 | 18.1 | 19.8 | Chi Sq. | 2.1 | 0.9 | 0.3 | 0.2 | 0.7 |
| H. S. 1-3 | 178 | 105 | 14 | 35 | 24 | Expected | 178.0 | 96.7 | 18.5 | 30.7 | 32.1 |
| | 100.0 | 59.0 | 7.9 | 19.7 | 13.5 | Chi Sq. | 4.5 | 0.7 | 1.1 | 0.6 | 2.0 |
| H. S. Grad. | 518 | 294 | 41 | 97 | 86 | Expected | 518.0 | 281.3 | 53.9 | 89.4 | 93.4 |
| | 100.0 | 56.8 | 7.9 | 18.7 | 16.6 | Chi Sq. | 4.9 | 0.6 | 3.1 | 0.6 | 0.6 |
| Coll. 1-3 | 303 | 166 | 32 | 43 | 62 | Expected | 303.0 | 164.6 | 31.5 | 52.3 | 54.6 |
| | 100.0 | 54.8 | 10.6 | 14.2 | 20.5 | Chi Sq. | 2.7 | 0.0 | 0.0 | 1.6 | 1.0 |
| Coll. Grad. | 163 | 90 | 19 | 27 | 27 | Expected | 163.0 | 88.5 | 16.9 | 28.1 | 29.4 |
| | 100.0 | 55.2 | 11.7 | 16.6 | 16.6 | Chi Sq. | 0.5 | 0.0 | 0.2 | 0.0 | 0.2 |
| Beyond B. A. | 43 | 29 | 3 | 2 | 9 | Expected | 43.0 | 23.4 | 4.5 | 7.4 | 7.8 |
| | 100.0 | 67.4 | 7.0 | 4.7 | 20.9 | Chi Sq. | 6.0 | 1.4 | 0.5 | 4.0 | 0.2 |
| **All Other Bio-Sciences** | | | | | | | | | | | |
| Total | 1989 | 1207 | 234 | 175 | 373 | Expected | 1989.0 | 1207.0 | 234.0 | 175.0 | 373.0 |
| | 100.0 | 60.7 | 11.8 | 8.8 | 18.8 | Chi Sq. | 38.6 | 5.6 | 10.9 | 6.8 | 15.3 |
| None | 41 | 16 | 1 | 6 | 18 | Expected | 41.0 | 24.9 | 4.8 | 3.6 | 7.7 |
| | 100.0 | 39.0 | 2.4 | 14.6 | 43.9 | Chi Sq. | 21.6 | 3.2 | 3.0 | 1.6 | 13.8 |
| Grades 1-3 | 27 | 17 | 3 | 1 | 6 | Expected | 27.0 | 16.4 | 3.2 | 2.4 | 5.1 |
| | 100.0 | 63.0 | 11.1 | 3.7 | 22.2 | Chi Sq. | 1.0 | 0.0 | 0.0 | 0.8 | 0.2 |
| Grades 4-6 | 140 | 90 | 13 | 9 | 28 | Expected | 140.0 | 85.0 | 16.5 | 12.3 | 26.3 |
| | 100.0 | 64.3 | 9.3 | 6.4 | 20.0 | Chi Sq. | 2.0 | 0.3 | 0.7 | 0.9 | 0.1 |
| Grades 7-8 | 436 | 249 | 68 | 41 | 78 | Expected | 436.0 | 264.6 | 51.3 | 38.4 | 81.8 |
| | 100.0 | 57.1 | 15.6 | 9.4 | 17.9 | Chi Sq. | 6.7 | 0.9 | 5.4 | 0.2 | 0.2 |
| H. S. 1-3 | 231 | 141 | 24 | 21 | 45 | Expected | 231.0 | 140.2 | 27.2 | 20.3 | 43.3 |
| | 100.0 | 61.0 | 10.4 | 9.1 | 19.5 | Chi Sq. | 0.5 | 0.0 | 0.4 | 0.0 | 0.1 |
| H. S. Grad. | 511 | 313 | 63 | 41 | 94 | Expected | 511.0 | 310.1 | 60.1 | 45.0 | 95.8 |
| | 100.0 | 61.3 | 12.3 | 8.0 | 18.4 | Chi Sq. | 0.5 | 0.0 | 0.1 | 0.3 | 0.0 |
| Coll. 1-3 | 377 | 236 | 39 | 38 | 64 | Expected | 377.0 | 228.8 | 44.4 | 33.2 | 70.7 |
| | 100.0 | 62.6 | 10.3 | 10.1 | 17.0 | Chi Sq. | 2.2 | 0.2 | 0.6 | 0.7 | 0.6 |
| Coll. Grad. | 181 | 113 | 18 | 17 | 33 | Expected | 181.0 | 109.8 | 21.3 | 15.9 | 33.9 |
| | 100.0 | 62.4 | 9.9 | 9.4 | 18.2 | Chi Sq. | 0.7 | 0.1 | 0.5 | 0.1 | 0.0 |
| Beyond B. A. | 45 | 32 | 5 | 1 | 7 | Expected | 45.0 | 27.3 | 5.3 | 4.0 | 8.4 |
| | 100.0 | 71.1 | 11.1 | 2.2 | 15.6 | Chi Sq. | 3.3 | 0.8 | 0.0 | 2.2 | 0.2 |

Appendix 14, continued

## 14C. RELATION OF OCCUPATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

| Occup. Level of Father | Numbers and Per cent Distribution | | | | | Computation of Chi Squared | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Cases | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other | Statistic | Total | Coll., Univ. | U.S. Govt. | Bus., Ind. | All Other |
| **Basic Medical Sciences** | | | | | | | | | | | |
| Total | 1854 | 1000 | 186 | 315 | 353 | Expected | 1854.0 | 1000.0 | 186.0 | 315.0 | 353.0 |
| | 100.0 | 53.9 | 10.0 | 17.0 | 19.0 | Chi Sq. | 30.5 | 3.0 | 12.8 | 7.7 | 7.1 |
| Coll. or | 97 | 52 | 12 | 11 | 22 | Expected | 97.0 | 52.3 | 9.7 | 16.5 | 18.5 |
| Univ. | 100.0 | 53.6 | 12.4 | 11.3 | 22.7 | Chi Sq. | 3.0 | 0.0 | 0.5 | 1.8 | 0.7 |
| Other | 370 | 210 | 22 | 55 | 83 | Expected | 370.0 | 199.6 | 37.1 | 62.9 | 70.4 |
| Prof. | 100.0 | 56.8 | 5.9 | 14.9 | 22.4 | Chi Sq. | 9.9 | 0.5 | 6.2 | 1.0 | 2.2 |
| Mana- | 318 | 164 | 27 | 61 | 66 | Expected | 318.0 | 171.5 | 31.9 | 54.0 | 60.5 |
| gerial | 100.0 | 51.6 | 8.5 | 19.2 | 20.8 | Chi Sq. | 2.5 | 0.3 | 0.8 | 0.9 | 0.5 |
| Farmer | 265 | 153 | 30 | 40 | 42 | Expected | 265.0 | 142.9 | 26.6 | 45.0 | 50.5 |
| | 100.0 | 57.7 | 11.3 | 15.1 | 15.8 | Chi Sq. | 3.1 | 0.7 | 0.4 | 0.6 | 1.4 |
| Sales, | 252 | 140 | 32 | 42 | 38 | Expected | 252.0 | 135.9 | 25.3 | 42.8 | 48.0 |
| Service | 100.0 | 55.6 | 12.7 | 16.7 | 15.1 | Chi Sq. | 4.0 | 0.1 | 1.8 | 0.0 | 2.1 |
| Clerical | 81 | 42 | 13 | 12 | 14 | Expected | 81.0 | 43.7 | 8.1 | 13.8 | 15.4 |
| | 100.0 | 51.9 | 16.0 | 14.8 | 17.3 | Chi Sq. | 3.3 | 0.1 | 2.9 | 0.2 | 0.1 |
| Skilled | 295 | 154 | 31 | 55 | 55 | Expected | 295.0 | 159.1 | 29.6 | 50.1 | 56.2 |
| Craft | 100.0 | 52.2 | 10.5 | 18.6 | 18.6 | Chi Sq. | 0.7 | 0.2 | 0.1 | 0.5 | 0.0 |
| Unsk. and | 176 | 85 | 19 | 39 | 33 | Expected | 176.0 | 94.9 | 17.7 | 29.9 | 33.5 |
| Semi-sk | 100.0 | 48.3 | 10.8 | 22.2 | 18.8 | Chi Sq. | 3.9 | 1.0 | 0.1 | 2.8 | 0.0 |
| **All Other Bio-Sciences** | | | | | | | | | | | |
| Total | 2041 | 1220 | 242 | 179 | 400 | Expected | 2041.0 | 1220.0 | 242.0 | 179.0 | 400.0 |
| | 100.0 | 59.8 | 11.9 | 8.8 | 19.6 | Chi Sq. | 37.0 | 1.9 | 13.7 | 8.9 | 12.4 |
| Coll. or | 106 | 62 | 13 | 6 | 25 | Expected | 106.0 | 63.4 | 12.6 | 9.3 | 20.8 |
| Univ. | 100.0 | 58.5 | 12.3 | 5.7 | 23.6 | Chi Sq. | 2.1 | 0.0 | 0.0 | 1.2 | 0.9 |
| Other | 418 | 246 | 41 | 28 | 103 | Expected | 418.0 | 249.9 | 49.6 | 36.7 | 81.9 |
| Prof. | 100.0 | 58.9 | 9.8 | 6.7 | 24.6 | Chi Sq. | 9.0 | 0.1 | 1.5 | 2.0 | 5.4 |
| Mana- | 274 | 164 | 24 | 26 | 60 | Expected | 274.0 | 163.8 | 32.5 | 24.0 | 53.7 |
| gerial | 100.0 | 59.9 | 8.8 | 9.5 | 21.9 | Chi Sq. | 3.1 | 0.0 | 2.2 | 0.2 | 0.7 |
| Farmer | 546 | 328 | 80 | 47 | 91 | Expected | 546.0 | 326.4 | 64.7 | 47.9 | 107.0 |
| | 100.0 | 60.1 | 14.7 | 8.6 | 16.7 | Chi Sq. | 6.0 | 0.0 | 3.6 | 0.0 | 2.4 |
| Sales, | 197 | 110 | 34 | 18 | 35 | Expected | 197.0 | 117.8 | 23.4 | 17.3 | 38.6 |
| Service | 100.0 | 55.8 | 17.3 | 9.1 | 17.8 | Chi Sq. | 5.7 | 0.5 | 4.8 | 0.0 | 0.3 |
| Clerical | 76 | 51 | 7 | 4 | 14 | Expected | 76.0 | 45.4 | 9.0 | 6.7 | 14.9 |
| | 100.0 | 67.1 | 9.2 | 5.3 | 18.4 | Chi Sq. | 2.3 | 0.7 | 0.4 | 1.1 | 0.1 |
| Skilled | 279 | 165 | 29 | 33 | 52 | Expected | 279.0 | 166.8 | 33.1 | 24.5 | 54.7 |
| Craft | 100.0 | 59.1 | 10.4 | 11.8 | 18.6 | Chi Sq. | 3.6 | 0.0 | 0.5 | 3.0 | 0.1 |
| Unsk. and | 145 | 94 | 14 | 17 | 20 | Expected | 145.0 | 86.7 | 17.2 | 12.7 | 28.4 |
| Semi-sk. | 100.0 | 64.8 | 9.7 | 11.7 | 13.8 | Chi Sq. | 5.1 | 0.6 | 0.6 | 1.4 | 2.5 |

## Appendix 15

## 15A. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, ALL COHORTS COMBINED

| Field of Doctorate | Total, All Fields | Physiology | Pharmacology | Biochemistry | Microbiology | Botany | Genetics | Zoology | Misc. Bio-Sciences | Medical Sciences | Agricultural Sciences | Psychology | Sociology | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physiology | 534 | 275 | 20 | 29 | 8 | 2 | 2 | 18 | 21 | 96 | 28 | 1 | | 34 |
| | 100.0 | 51.5 | 3.7 | 5.4 | 1.5 | .4 | .4 | 3.4 | 3.9 | 18.0 | 5.2 | .2 | .0 | 6.4 |
| Pharmacology | 153 | 2 | 79 | 2 | | | | | 3 | 40 | | 1 | | 26 |
| | 100.0 | 1.3 | 51.6 | 1.3 | .0 | .0 | .0 | .0 | 2.0 | 26.1 | .0 | .7 | .0 | 17.0 |
| Biochemistry | 688 | 22 | 22 | 383 | 17 | | 5 | 1 | 10 | 41 | 47 | | | 140 |
| | 100.0 | 3.2 | 3.2 | 55.7 | 2.5 | .0 | .7 | .1 | 1.5 | 6.0 | 6.8 | .0 | .0 | 20.3 |
| Microbiology | 513 | 17 | 1 | 23 | 351 | 6 | 4 | 2 | 12 | 35 | 16 | | | 46 |
| | 100.0 | 3.3 | .2 | 4.5 | 68.4 | 1.2 | .8 | .4 | 2.3 | 6.8 | 3.1 | .0 | .0 | 9.0 |
| Botany | 445 | 61 | 2 | 8 | 26 | 199 | 26 | 2 | 41 | 11 | 37 | | | 32 |
| | 100.0 | 13.7 | .4 | 1.8 | 5.8 | 44.7 | 5.8 | .4 | 9.2 | 2.5 | 8.3 | .0 | .0 | 7.2 |
| Genetics | 155 | 9 | | 3 | 3 | 7 | 73 | 2 | 9 | 3 | 39 | | | 7 |
| | 100.0 | 5.8 | .0 | 1.9 | 1.9 | 4.5 | 47.1 | 1.3 | 5.8 | 1.9 | 25.2 | .0 | .0 | 4.5 |
| Zoology | 525 | 99 | 4 | 9 | 17 | 5 | 8 | 244 | 72 | 22 | 16 | | | 29 |
| | 100.0 | 18.9 | .8 | 1.7 | 3.2 | 1.0 | 1.5 | 46.5 | 13.7 | 4.2 | 3.0 | .0 | .0 | 5.5 |
| Misc. Bio-Sciences | 153 | 22 | 1 | 9 | 6 | 8 | 2 | 14 | 62 | 8 | 6 | 1 | | 14 |
| | 100.0 | 14.4 | .7 | 5.9 | 3.9 | 5.2 | 1.3 | 9.2 | 40.5 | 5.2 | 3.9 | .7 | .0 | 9.2 |
| Medical Sciences | 254 | 11 | 7 | 6 | 10 | | | 3 | 4 | 188 | 1 | | | 24 |
| | 100.0 | 4.3 | 2.8 | 2.4 | 3.9 | .0 | .0 | 1.2 | 1.6 | 74.0 | .4 | .0 | .0 | 9.4 |
| Agricultural Sciences | 536 | 14 | 1 | 14 | 3 | 12 | 14 | 6 | 4 | 5 | 387 | | | 76 |
| | 100.0 | 2.6 | .2 | 2.6 | .6 | 2.2 | 2.6 | 1.1 | .7 | .9 | 72.2 | .0 | .0 | 14.2 |
| Psychology | 468 | 2 | | | | | | | 1 | 9 | | 379 | 2 | 75 |
| | 100.0 | .4 | .0 | .0 | .0 | .0 | .0 | .0 | .2 | 1.9 | .0 | 81.0 | .4 | 16.0 |
| Sociology | 449 | 2 | | | | | 1 | | | 2 | 1 | 13 | 314 | 116 |
| | 100.0 | .4 | .0 | .0 | .0 | .0 | .2 | .0 | .0 | .4 | .2 | 2.9 | 69.9 | 25.8 |

| Field of Doctorate | Total, All Fields | Economics | Political Science | History-Geography | Mathematics | Physics | Chemistry | Geo-Sciences | Engineering | Languages & Literature | Arts & Humanities | Misc. Professions | Education | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Economics | 436 | 315 | 6 | 2 | 8 | | 3 | | 1 | | 1 | 76 | 15 | 9 |
| | 100.0 | 72.2 | 1.4 | .5 | 1.8 | .0 | .7 | .0 | .2 | .0 | .2 | 17.4 | 3.4 | 2.1 |
| Political Science | 378 | 14 | 286 | 16 | | | 7 | | | 2 | | 26 | 22 | 5 |
| | 100.0 | 3.7 | 75.7 | 4.2 | .0 | .0 | 1.9 | .0 | .0 | .5 | .0 | 6.9 | 5.8 | 1.3 |
| History-Geography | 449 | 4 | 15 | 347 | | 2 | 4 | 2 | | 9 | 6 | 23 | 34 | 3 |
| | 100.0 | .9 | 3.3 | 77.3 | .0 | .4 | .9 | .4 | .0 | 2.0 | 1.3 | 5.1 | 7.6 | .7 |
| Mathematics | 458 | 1 | | | 404 | 4 | 4 | 1 | 20 | | | 4 | 14 | 6 |
| | 100.0 | .2 | .0 | .0 | 88.2 | .9 | .9 | .2 | 4.4 | .0 | .0 | .9 | 3.1 | 1.3 |
| Physics | 436 | | 2 | | 11 | 335 | 14 | 5 | 44 | | | 6 | 5 | 14 |
| | 100.0 | .0 | .5 | .0 | 2.5 | 76.8 | 3.2 | 1.1 | 10.1 | .0 | .0 | 1.4 | 1.1 | 3.2 |
| Chemistry | 493 | | | | 2 | 12 | 374 | 5 | 32 | | | 26 | 7 | 35 |
| | 100.0 | .0 | .0 | .0 | .4 | 2.4 | 75.9 | 1.0 | 6.5 | .0 | .0 | 5.3 | 1.4 | 7.1 |
| Geo-Sciences | 433 | 1 | | 2 | 6 | 5 | 3 | 387 | 10 | | | 4 | 7 | 8 |
| | 100.0 | .2 | .0 | .5 | 1.4 | 1.2 | .7 | 89.4 | 2.3 | .0 | .0 | .9 | 1.6 | 1.8 |
| Engineering | 463 | | | | 5 | 8 | 15 | 5 | 402 | | | 13 | 8 | 7 |
| | 100.0 | .0 | .0 | .0 | 1.1 | 1.7 | 3.2 | 1.1 | 86.8 | .0 | .0 | 2.8 | 1.7 | 1.5 |
| Languages & Literature | 457 | | 2 | 3 | 1 | | 5 | | 1 | 376 | 15 | 18 | 31 | 5 |
| | 100.0 | .0 | .4 | .7 | .2 | .0 | 1.1 | .0 | .2 | 82.3 | 3.3 | 3.9 | 6.8 | 1.1 |
| Arts & Humanities | 379 | 1 | 3 | 3 | 3 | | 3 | | | 28 | 263 | 31 | 27 | 17 |
| | 100.0 | .3 | .8 | .8 | .8 | .0 | .8 | .0 | .0 | 7.4 | 69.4 | 8.2 | 7.1 | 4.5 |
| Misc. Professions | 366 | 22 | 8 | 13 | 1 | | 1 | | | 3 | 14 | 264 | 21 | 19 |
| | 100.0 | 6.0 | 2.2 | 3.6 | .3 | .0 | .3 | .0 | .0 | .8 | 3.8 | 72.1 | 5.7 | 5.2 |
| Education | 396 | 2 | 1 | 5 | 9 | 2 | 5 | | | 8 | 7 | 17 | 299 | 41 |
| | 100.0 | .5 | .3 | 1.3 | 2.3 | .5 | 1.3 | .0 | .0 | 2.0 | 1.8 | 4.3 | 75.5 | 10.4 |

## 15 B. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1935-40

| Field of Doctorate | Total, All Fields | Physiology | Pharmacology | Biochemistry | Microbiology | Botany | Genetics | Zoology | Misc. Bio-Sciences | Medical Sciences | Agricultural Sciences | Psychology | Sociology | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physiology | 198 | 59 | 6 | 17 | 3 | 1 | 1 | 10 | 9 | 51 | 12 | | | 23 |
| | 100.0 | 30.7 | 3.1 | 8.9 | 1.6 | .5 | .5 | 5.2 | 4.7 | 26.6 | 6.3 | .0 | .0 | 12.0 |
| Pharmacology | 40 | 1 | 9 | | | | | | | 11 | | | | 19 |
| | 100.0 | 2.5 | 22.5 | .0 | .0 | .0 | .0 | .0 | .0 | 27.5 | .0 | .0 | .0 | 47.5 |
| Biochemistry | 190 | 3 | 12 | 57 | 8 | | 2 | | 1 | 20 | 20 | | | 67 |
| | 100.0 | 1.6 | 6.3 | 30.0 | 4.2 | .0 | 1.1 | .0 | .5 | 10.5 | 10.5 | .0 | .0 | 35.3 |
| Microbiology | 137 | 5 | 1 | 8 | 63 | 3 | 1 | | 4 | 17 | 11 | | | 29 |
| | 100.0 | 3.6 | .7 | 2.2 | 46.0 | 2.2 | .7 | .0 | 2.9 | 12.4 | 8.0 | .0 | .0 | 21.2 |
| Botany | 128 | 5 | | 3 | 5 | 51 | 10 | 1 | 17 | 4 | 12 | | | 20 |
| | 100.0 | 3.9 | .0 | 2.3 | 3.9 | 39.8 | 7.8 | .8 | 13.3 | 3.1 | 9.4 | .0 | .0 | 15.6 |
| Genetics | 51 | 3 | | 1 | 1 | 4 | 16 | 1 | 4 | 3 | 14 | | | 4 |
| | 100.0 | 5.9 | .0 | 2.0 | 2.0 | 7.8 | 31.4 | 2.0 | 7.8 | 5.9 | 27.5 | .0 | .0 | 7.8 |
| Zoology | 153 | 24 | 1 | 2 | 2 | 2 | 2 | 61 | 22 | 11 | 10 | | | 16 |
| | 100.0 | 15.7 | .7 | 1.3 | 1.3 | 1.3 | 1.3 | 39.9 | 14.4 | 7.2 | 6.5 | .0 | .0 | 10.5 |
| Misc. Bio-Sciences | 31 | 6 | | 1 | 2 | 1 | 1 | 5 | 7 | 2 | 1 | 1 | | 4 |
| | 100.0 | 19.4 | .0 | 3.2 | 6.5 | 3.2 | 3.2 | 16.1 | 22.6 | 6.5 | 3.2 | 3.2 | .0 | 12.9 |
| Medical Sciences | 70 | 3 | 1 | 2 | 3 | | | 1 | 1 | 52 | | | | 7 |
| | 100.0 | 4.3 | 1.4 | 2.9 | 4.3 | .0 | .0 | 1.4 | 1.4 | 74.3 | .0 | .0 | .0 | 10.0 |
| Agricultural Sciences | 151 | 1 | | 2 | | 9 | 4 | 3 | 1 | | 98 | | | 33 |
| | 100.0 | .7 | .0 | 1.3 | .0 | 6.0 | 2.6 | 2.0 | .7 | .0 | 64.9 | .0 | .0 | 21.4 |
| Psychology | 144 | | | | | | | | | 3 | | 102 | | 39 |
| | 100.0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | 2.1 | .0 | 70.8 | .0 | 27.1 |
| Sociology | 143 | 1 | | | | | 1 | | | 1 | 1 | 6 | 89 | 44 |
| | 100.0 | .7 | .0 | .0 | .0 | .0 | .7 | .0 | .0 | .7 | .7 | 4.2 | 62.2 | 39.8 |

| Field of Doctorate | Total, All Fields | Economics | Political Science | History-Geography | Mathematics | Physics | Chemistry | Geo-Sciences | Engineering | Languages & Literature | Arts & Humanities | Misc. Professions | Education | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Economics | 136 | 92 | 4 | 1 | 1 | | 2 | | | | | 24 | 8 | 4 |
| | 100.0 | 67.6 | 2.9 | .7 | .7 | .0 | 1.5 | .0 | .0 | .0 | .0 | 17.6 | 5.9 | 2.9 |
| Political Science | 110 | 8 | 75 | 5 | | | 1 | | | 1 | | 10 | 8 | 2 |
| | 100.0 | 7.3 | 68.2 | 4.5 | .0 | .0 | .9 | .0 | .0 | .9 | .0 | 3.1 | 7.3 | 1.8 |
| History-Geography | 117 | | 8 | 80 | | 1 | 3 | 1 | | 2 | 1 | 5 | 14 | 2 |
| | 100.0 | .0 | 6.8 | 68.4 | .0 | .9 | 2.6 | .9 | .0 | 1.7 | .9 | 4.3 | 12.0 | 1.7 |
| Mathematics | 131 | 1 | | | 108 | | 1 | | 6 | | | 3 | 12 | |
| | 100.0 | .8 | .0 | .0 | 82.4 | .0 | .8 | .0 | 4.6 | .0 | .0 | 2.3 | 9.2 | .0 |
| Physics | 140 | | 1 | | 2 | 90 | 9 | 3 | 22 | | | 3 | 3 | 7 |
| | 100.0 | .0 | .7 | .0 | 1.4 | 64.3 | 6.4 | 2.1 | 15.7 | .0 | .0 | 2.1 | 2.1 | 5.0 |
| Chemistry | 168 | | | | 1 | 2 | 107 | 2 | 19 | | | 17 | 5 | 15 |
| | 100.0 | .0 | .0 | .0 | .6 | 1.2 | 63.7 | 1.2 | 11.3 | .0 | .0 | 10.1 | 3.0 | 8.9 |
| Geo-Sciences | 136 | 1 | | 1 | 1 | | 1 | 122 | 1 | | | 3 | 3 | 3 |
| | 100.0 | .7 | .0 | .7 | .7 | .0 | .7 | 89.7 | .7 | .0 | .0 | 2.2 | 2.2 | 2.2 |
| Engineering | 138 | | | | | 3 | 7 | | 110 | | | 11 | 6 | 1 |
| | 100.0 | .0 | .0 | .0 | .0 | 2.2 | 5.1 | .0 | 79.7 | .0 | .0 | 8.0 | 6.3 | .7 |
| Languages & Literature | 153 | | 1 | | | | 3 | | 1 | 115 | 7 | 10 | 12 | 4 |
| | 100.0 | .0 | .7 | .0 | .0 | .0 | 2.0 | .0 | .7 | 75.2 | 4.6 | 6.5 | 7.8 | 2.6 |
| Arts & Humanities | 122 | 1 | 1 | 2 | | | 1 | | | 15 | 65 | 18 | 11 | 8 |
| | 100.0 | .8 | .8 | 1.6 | .0 | .0 | .8 | .0 | .0 | 12.3 | 53.3 | 14.8 | 9.0 | 6.6 |
| Misc. Professions | 91 | 6 | 1 | 4 | 1 | | 1 | | | 1 | 6 | 57 | 7 | 7 |
| | 100.0 | 6.6 | 1.1 | 4.4 | 1.1 | .0 | 1.1 | .0 | .0 | 1.1 | 6.6 | 62.6 | 7.7 | 7.7 |
| Education | 93 | 1 | 1 | 1 | 3 | 2 | 1 | | | 5 | 3 | 6 | 61 | 9 |
| | 100.0 | 1.1 | 1.1 | 1.1 | 3.2 | 2.2 | 1.1 | .0 | .0 | 5.4 | 3.2 | 6.5 | 65.6 | 9.7 |

## Appendix 15

## 15 C. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1945-50

| Field of Doctorate | Total, All Fields | Physiology | Pharmacology | Biochemistry | Microbiology | Botany | Genetics | Zoology | Misc. Bio-Sciences | Medical Sciences | Agricultural Sciences | Psychology | Sociology | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physiology | 79<br>100.0 | 39<br>49.4 | 6<br>7.6 | 3<br>3.8 | 1<br>1.3 | .0 | 1<br>1.3 | 2<br>2.5 | 4<br>5.1 | 14<br>17.7 | 2<br>2.5 | 1<br>1.3 | .0 | 6<br>7.6 |
| Pharmacology | 47<br>100.0 | .0 | 19<br>40.4 | 2<br>4.3 | .0 | .0 | .0 | .0 | 1<br>2.1 | 19<br>40.4 | .0 | 1<br>2.1 | .0 | 5<br>10.6 |
| Biochemistry | 154<br>100.0 | 9<br>5.8 | 2<br>1.3 | 80<br>51.9 | 6<br>3.9 | .0 | 1<br>.6 | .0 | 3<br>1.9 | 7<br>4.5 | 10<br>6.5 | .0 | .0 | 36<br>23.4 |
| Microbiology | 122<br>100.0 | 5<br>4.1 | .0 | 5<br>4.1 | 90<br>73.8 | 3<br>2.5 | .0 | .0 | 2<br>1.6 | 6<br>4.9 | 3<br>2.5 | .0 | .0 | 8<br>6.6 |
| Botany | 140<br>100.0 | 21<br>15.0 | 2<br>1.4 | 2<br>1.4 | 10<br>7.1 | 55<br>39.3 | 12<br>8.6 | .0 | 10<br>7.1 | 5<br>3.6 | 15<br>10.7 | .0 | .0 | 8<br>5.7 |
| Genetics | 27<br>100.0 | 1<br>3.7 | .0 | 1<br>3.7 | .0 | 1<br>3.7 | 11<br>40.7 | .0 | 2<br>7.4 | .0 | 9<br>33.3 | .0 | .0 | 2<br>7.4 |
| Zoology | 176<br>100.0 | 29<br>16.5 | 1<br>.6 | 3<br>1.7 | 8<br>4.5 | 2<br>1.1 | 2<br>1.1 | 84<br>47.7 | 28<br>15.9 | 8<br>4.5 | 3<br>1.7 | .0 | .0 | 8<br>4.5 |
| Misc. Bio-Sciences | 1<br>100.0 | .0 | .0 | .0 | .0 | .0 | 1<br>100.0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| Medical Sciences | 63<br>100.0 | 5<br>7.9 | 2<br>3.2 | 1<br>1.6 | 5<br>7.9 | .0 | .0 | 1<br>1.6 | 3<br>4.8 | 42<br>66.7 | .0 | .0 | .0 | 4<br>6.3 |
| Agricultural Sciences | 168<br>100.0 | 4<br>2.4 | 1<br>.6 | 5<br>3.0 | 1<br>.6 | 3<br>1.8 | 6<br>3.6 | 1<br>.6 | .0 | 2<br>1.2 | 131<br>78.0 | .0 | .0 | 14<br>8.3 |
| Psychology | 171<br>100.0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | 1<br>.6 | 6<br>3.5 | .0 | 140<br>81.9 | .0 | 24<br>14.0 |
| Sociology | 125<br>100.0 | 1<br>.8 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | 4<br>3.2 | 82<br>65.6 | 38<br>30.4 |

| Field of Doctorate | Total, All Fields | Economics | Political Science | History-Geography | Mathematics | Physics | Chemistry | Geo-Sciences | Engineering | Languages & Literature | Arts & Humanities | Misc. Professions | Education | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Economics | 134<br>100.0 | 94<br>70.1 | 2<br>1.5 | 1<br>.7 | .0 | .0 | 1<br>.7 | .0 | .0 | .0 | 1<br>.7 | 26<br>19.4 | 5<br>3.7 | 4<br>3.0 |
| Political Science | 107<br>100.0 | 3<br>2.8 | 80<br>74.8 | 6<br>5.6 | .0 | .0 | 3<br>2.8 | .0 | .0 | 1<br>.9 | .0 | 5<br>4.7 | 8<br>7.5 | 1<br>.9 |
| History-Geography | 158<br>100.0 | 2<br>1.3 | 4<br>2.5 | 119<br>75.3 | .0 | .0 | .0 | .0 | .0 | 5<br>3.2 | 2<br>1.3 | 13<br>8.2 | 13<br>8.2 | .0 |
| Mathematics | 131<br>100.0 | .0 | .0 | .0 | 117<br>89.3 | .0 | 2<br>1.5 | .0 | 7<br>5.3 | .0 | .0 | 1<br>.8 | 1<br>.8 | 3<br>2.3 |
| Physics | 157<br>100.0 | .0 | 1<br>.6 | .0 | 5<br>3.2 | 120<br>76.4 | 3<br>1.9 | 2<br>1.3 | 15<br>9.6 | .0 | .0 | 2<br>1.3 | 2<br>1.3 | 7<br>4.5 |
| Chemistry | 155<br>100.0 | .0 | .0 | .0 | .0 | 1<br>.6 | 124<br>80.0 | 1<br>.6 | 11<br>7.1 | .0 | .0 | 6<br>3.9 | 2<br>1.3 | 10<br>6.5 |
| Geo-Sciences | 144<br>100.0 | .0 | .0 | 1<br>.7 | 2<br>1.4 | 4<br>2.8 | 2<br>1.4 | 123<br>85.4 | 6<br>4.2 | .0 | .0 | 1<br>.7 | 4<br>2.8 | 1<br>.7 |
| Engineering | 144<br>100.0 | .0 | .0 | .0 | 3<br>2.1 | 1<br>.7 | 6<br>4.2 | 2<br>1.4 | 125<br>86.8 | .0 | .0 | 1<br>.7 | 2<br>1.4 | 4<br>2.8 |
| Languages & Literature | 141<br>100.0 | .0 | 1<br>.7 | 3<br>2.1 | 1<br>.7 | .0 | .0 | .0 | .0 | 116<br>82.3 | 6<br>4.3 | 8<br>5.7 | 6<br>4.3 | .0 |
| Arts & Humanities | 115<br>100.0 | .0 | 1<br>.9 | 1<br>.9 | 2<br>1.7 | .0 | 1<br>.9 | .0 | .0 | 3<br>2.6 | 81<br>70.4 | 11<br>9.6 | 12<br>10.4 | 3<br>2.6 |
| Misc. Professions | 117<br>100.0 | 7<br>6.0 | 5<br>4.3 | 6<br>5.1 | .0 | .0 | .0 | .0 | .0 | 2<br>1.7 | 6<br>5.1 | 80<br>68.4 | 5<br>4.3 | 6<br>5.1 |
| Education | 140<br>100.0 | 1<br>.7 | .0 | 1<br>.7 | 2<br>1.4 | .0 | 1<br>.7 | .0 | .0 | 1<br>.7 | 2<br>1.4 | 5<br>3.6 | 106<br>75.7 | 21<br>15.0 |

## Appendix 15

## 15 D. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1955-60

| Field of Doctorate | Total, All Fields | Physiology | Pharmacology | Biochemistry | Microbiology | Botany | Genetics | Zoology | Misc. Bio-Sciences | Medical Sciences | Agricultural Sciences | Psychology | Sociology | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 263 | 177 | 8 | 9 | 4 | 1 | | 6 | 8 | 31 | 14 | | | 5 |
| Physiology | 100.0 | 67.3 | 3.0 | 3.4 | 1.5 | .4 | .0 | 2.3 | 3.0 | 11.8 | 5.3 | .0 | .0 | 1.9 |
| | 66 | 1 | 51 | | | | | | 2 | 10 | | | | 2 |
| Pharmacology | 100.0 | 1.5 | 77.3 | .0 | .0 | .0 | .0 | .0 | 3.0 | 15.2 | .0 | .0 | .0 | 3.0 |
| | 344 | 10 | 8 | 246 | 3 | | 2 | 1 | 6 | 14 | 17 | | | 37 |
| Biochemistry | 100.0 | 2.9 | 2.3 | 71.5 | .9 | .0 | .6 | .3 | 1.7 | 4.1 | 4.9 | .0 | .0 | 10.8 |
| | 254 | 7 | | 15 | 198 | | 3 | 2 | 6 | 12 | 2 | | | 9 |
| Microbiology | 100.0 | 2.8 | .0 | 5.9 | 78.0 | .0 | 1.2 | .8 | 2.4 | 4.7 | .8 | .0 | .0 | 3.5 |
| | 177 | 35 | | 3 | 11 | 93 | 4 | 1 | 14 | 2 | 10 | | | 4 |
| Botany | 100.0 | 19.8 | .0 | 1.7 | 6.2 | 52.5 | 2.3 | .6 | 7.9 | 1.1 | 5.6 | .0 | .0 | 2.3 |
| | 77 | 5 | | 1 | 2 | 2 | 46 | 1 | 3 | | 16 | | | 1 |
| Genetics | 100.0 | 6.5 | .0 | 1.3 | 2.6 | 2.6 | 59.7 | 1.3 | 3.9 | .0 | 20.8 | .0 | .0 | 1.3 |
| | 196 | 46 | 2 | 4 | 7 | 1 | 4 | 99 | 22 | 3 | 3 | | | 5 |
| Zoology | 100.0 | 23.5 | 1.0 | 2.0 | 3.6 | .5 | 2.0 | 50.5 | 11.2 | 1.5 | 1.5 | .0 | .0 | 2.6 |
| Misc. | 121 | 16 | 1 | 8 | 4 | 7 | | 9 | 55 | 6 | 5 | | | 10 |
| Bio-Sciences | 100.0 | 13.2 | .8 | 6.6 | 3.3 | 5.8 | .0 | 7.4 | 45.5 | 5.0 | 4.1 | .0 | .0 | 8.3 |
| Medical | 121 | 3 | 4 | 3 | 2 | | | 1 | | 94 | 1 | | | 13 |
| Sciences | 100.0 | 2.5 | 3.3 | 2.5 | 1.7 | .0 | .0 | .8 | .0 | 77.7 | .8 | .0 | .0 | 10.7 |
| Agricultural | 217 | 9 | | 7 | 2 | | 4 | 2 | 3 | 3 | 158 | | | 29 |
| Sciences | 100.0 | 4.1 | .0 | 3.2 | .9 | .0 | 1.8 | .9 | 1.4 | 1.4 | 72.8 | .0 | .0 | 13.4 |
| | 153 | 2 | | | | | | | | | | 137 | 2 | 12 |
| Psychology | 100.0 | 1.3 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | 89.5 | 1.3 | 7.8 |
| | 181 | | | | | | | | | 1 | | 3 | 143 | 34 |
| Sociology | 100.0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .6 | .0 | 1.7 | 79.0 | 18.8 |

| Field of Doctorate | Total, All Fields | Economics | Political Science | History-Geography | Mathematics | Physics | Chemistry | Geo-Sciences | Engineering | Languages & Literature | Arts & Humanities | Misc. Professions | Education | All Other Fields |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 166 | 129 | | | 7 | | | | 1 | | | 26 | 2 | 1 |
| Economics | 100.0 | 77.7 | .0 | .0 | 4.2 | .0 | .0 | .0 | .6 | .0 | .0 | 15.7 | 1.2 | .6 |
| Political | 161 | 3 | 131 | 5 | | | 3 | | | | | 11 | 6 | 2 |
| Science | 100.0 | 1.9 | 81.4 | 3.1 | .0 | .0 | 1.9 | .0 | .0 | .0 | .0 | 6.8 | 3.7 | 1.2 |
| History- | 174 | 2 | 3 | 148 | | 1 | 1 | 1 | | 2 | 3 | 5 | 7 | 1 |
| Geography | 100.0 | 1.1 | 1.7 | 85.1 | .0 | .6 | .6 | .6 | .0 | 1.1 | 1.7 | 2.9 | 4.0 | .6 |
| | 196 | | | | 179 | 4 | 1 | 1 | 7 | | | | 1 | 3 |
| Mathematics | 100.0 | .0 | .0 | .0 | 91.3 | 2.0 | .5 | .5 | 3.6 | .0 | .0 | .0 | .5 | 1.5 |
| | 139 | | | | 4 | 125 | 2 | | 7 | | | 1 | | |
| Physics | 100.0 | .0 | .0 | .0 | 2.9 | 89.9 | 1.4 | .0 | 5.0 | .0 | .0 | .7 | .0 | .0 |
| | 170 | | | | 1 | 9 | 143 | 2 | 2 | | | 3 | | 10 |
| Chemistry | 100.0 | .0 | .0 | .0 | .6 | 5.3 | 84.1 | 1.2 | 1.2 | .0 | .0 | 1.8 | .0 | 5.9 |
| | 153 | | | | 3 | 1 | | 142 | 3 | | | | | 4 |
| Geo-Sciences | 100.0 | .0 | .0 | .0 | 2.0 | .7 | .0 | 92.8 | 2.0 | .0 | .0 | .0 | .0 | 2.6 |
| | 181 | | | | 2 | 4 | 2 | 3 | 167 | | | 1 | | 2 |
| Engineering | 100.0 | .0 | .0 | .0 | 1.1 | 2.2 | 1.1 | 1.7 | 92.3 | .0 | .0 | .6 | .0 | 1.1 |
| Languages & | 163 | | | | | | 2 | | | 145 | 2 | | 13 | 1 |
| Literature | 100.0 | .0 | .0 | .0 | .0 | .0 | 1.2 | .0 | .0 | 89.0 | 1.2 | .0 | 8.0 | .6 |
| Arts & | 142 | | 1 | | 1 | | 1 | | | 10 | 117 | 2 | 4 | 6 |
| Humanities | 100.0 | .0 | .7 | .0 | .7 | .0 | .7 | .0 | .0 | 7.0 | 82.4 | 1.4 | 2.8 | 4.2 |
| Misc. | 158 | 9 | 2 | 3 | | | | | | | 2 | 127 | 9 | 6 |
| Professions | 100.0 | 5.7 | 1.3 | 1.9 | .0 | .0 | .0 | .0 | .0 | .0 | 1.3 | 80.4 | 5.7 | 3.8 |
| | 163 | | | 3 | 4 | | 3 | | | 2 | 2 | 6 | 132 | 11 |
| Education | 100.0 | .0 | .0 | 1.8 | 2.5 | .0 | 1.8 | .0 | .0 | 1.2 | 1.2 | 3.7 | 81.0 | 6.7 |

## Appendix 16

## EMPLOYERS OF WOMEN DOCTORATE-HOLDERS

| COHORT | FIELD | CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TOTAL GROUP | COLL & U | ELEM & HS | U.S. GOVT | FRGN UNIV | ST & LOC. | NON-PRFT | BUS, IND. | SELF EMPL | FRN, NON-U | OTHER |
| ALL | TOTAL, ALL FIELDS | 1053 | 690 | 56 | 74 | 23 | 31 | 65 | 40 | 27 | 17 | 30 |
| COHORT 35-40 | TOTAL, ALL FIELDS | 330 | 190 | 31 | 22 | 5 | 11 | 27 | 11 | 13 | 6 | 14 |
| | BIO-SCIENCES, TOTAL | 128 | 71 | 10 | 11 | 2 | 4 | 10 | 6 | 5 | 1 | 8 |
| | BASIC MED. SCIENCES | 78 | 40 | 5 | 10 | | 4 | 7 | 5 | 4 | | 3 |
| | OTHER BIO-SCIENCES | 50 | 31 | 5 | 1 | 2 | | 3 | 1 | 1 | 1 | 5 |
| | MEDICAL SCIENCES | 8 | 3 | | 1 | | 1 | 1 | 1 | 1 | | |
| | AGRIC. SCIENCES | 1 | | | 1 | | | | | | | |
| | PSYCHOLOGY | 35 | 12 | 6 | 2 | | 3 | 5 | 2 | 3 | 1 | 1 |
| | SOCIAL SCIENCES | 62 | 35 | 6 | 4 | 2 | 2 | 5 | | 3 | 1 | 4 |
| | MATHEMATICS | 15 | 14 | | | | | 1 | | | | |
| | PHYSICAL SCIENCES | 11 | 4 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 |
| | ENGINEERING | | | | | | | | | | | |
| | ALL OTHER FIELDS | 70 | 51 | 8 | 2 | 1 | | 4 | 1 | | 3 | |
| COHORT 45-50 | TOTAL, ALL FIELDS | 374 | 257 | 16 | 25 | 4 | 10 | 22 | 16 | 12 | 4 | 8 |
| | BIO-SCIENCES, TOTAL | 129 | 88 | 3 | 8 | 1 | 3 | 10 | 5 | 4 | 3 | 4 |
| | BASIC MED. SCIENCES | 76 | 52 | 1 | 4 | | 1 | 6 | 5 | 4 | 2 | 1 |
| | OTHER BIO-SCIENCES | 53 | 36 | 2 | 4 | 1 | 2 | 4 | | | 1 | 3 |
| | MEDICAL SCIENCES | 7 | 3 | | 2 | | | 2 | | | | |
| | AGRIC. SCIENCES | 10 | 7 | | | | | | 1 | 1 | | 1 |
| | PSYCHOLOGY | 37 | 21 | 2 | 2 | | 2 | 5 | 3 | 2 | | |
| | SOCIAL SCIENCES | 59 | 40 | 1 | 4 | 1 | 3 | 4 | | 3 | 1 | 2 |
| | MATHEMATICS | 12 | 11 | | | | | | 1 | | | |
| | PHYSICAL SCIENCES | 19 | 9 | 3 | 3 | | | | 4 | | | |
| | ENGINEERING | | | | | | | | | | | |
| | ALL OTHER FIELDS | 101 | 78 | 7 | 6 | 2 | 2 | 1 | 2 | 2 | | 1 |
| COHORT 55-60 | TOTAL, ALL FIELDS | 349 | 243 | 9 | 27 | 14 | 10 | 16 | 13 | 2 | 7 | 8 |
| | BIO-SCIENCES, TOTAL | 130 | 90 | 1 | 12 | 6 | 4 | 7 | 4 | | 4 | 2 |
| | BASIC MED. SCIENCES | 87 | 62 | 1 | 8 | 1 | 3 | 5 | 3 | | 2 | 2 |
| | OTHER BIO-SCIENCES | 43 | 28 | | 4 | 5 | 1 | 2 | 1 | | 2 | |
| | MEDICAL SCIENCES | 8 | 4 | | 2 | | 1 | | | | 1 | |
| | AGRIC. SCIENCES | 6 | 3 | | 2 | | 1 | | | | | |
| | PSYCHOLOGY | 20 | 9 | 1 | 1 | | 1 | 6 | 1 | 1 | | |
| | SOCIAL SCIENCES | 64 | 47 | 1 | 7 | 1 | 1 | 2 | 1 | | 2 | 2 |
| | MATHEMATICS | 10 | 7 | | 1 | 1 | | | 1 | | | |
| | PHYSICAL SCIENCES | 17 | 9 | | 1 | | | | 4 | | | 3 |
| | ENGINEERING | | | | | | | | | | | |
| | ALL OTHER FIELDS | 94 | 74 | 6 | 1 | 6 | 2 | 1 | 2 | 1 | | 1 |

## Appendix 17

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

| COHORT | FIELD | TEACHING RESEARCH 50% EACH | | RESEARCH ADMIN. 50% EACH | | ADMIN. TEACHING 50% EACH | | RESEARCH 50% OR MORE OTHERS LESS | |
|---|---|---|---|---|---|---|---|---|---|
| | | NO. | MEAN | NO. | MEAN | NO. | MEAN | NO. | MEAN |
| ALL | TOTAL, ALL FIELDS | 318 | 11,167 | 176 | 15,922 | 74 | 12,569 | 2464 | 11,832 |
| COHORT 1935 | TOTAL, ALL FIELDS | 37 | 11,374 | 22 | 18,737 | 18 | 12,735 | 180 | 13,909 |
| | BIO-SCIENCES, TOTAL | 14 | 9,150 | 5 | 16,749 | 5 | 12,360 | 82 | 11,968 |
| | BASIC MED. SCIENCES | 3 | 4,713 | 5 | 16,749 | | | 37 | 12,621 |
| | PHYSIOLOGY | 2 | 3,388 | | | | | 17 | 13,163 |
| | PHARMACOLOGY | | | 1 | 12,023 | | | 1 | 15,488 |
| | BIOCHEMISTRY | | | 2 | 26,002 | | | 10 | 9,661 |
| | MICROBIOLOGY | 1 | 9,121 | 2 | 12,735 | | | 9 | 15,333 |
| | OTHER BIO-SCIENCES | 11 | 10,965 | | | 5 | 12,360 | 45 | 11,456 |
| | BOTANY | 2 | 10,965 | | | 2 | 12,303 | 16 | 12,059 |
| | GENETICS | 2 | 16,406 | | | | | 6 | 9,623 |
| | ZOOLOGY | 5 | 9,290 | | | 1 | 10,000 | 16 | 10,233 |
| | MISC. BIOLOGY | 2 | 11,092 | | | 2 | 13,804 | 7 | 15,336 |
| | MEDICAL SCIENCES | | | | | | | 2 | 12,589 |
| | AGRIC. SCIENCES | 3 | 9,333 | 3 | 13,082 | | | 17 | 13,470 |
| | PSYCHOLOGY | 1 | 18,621 | 1 | 19,953 | 1 | 7,079 | 3 | 12,303 |
| | SOCIAL SCIENCES | 6 | 8,446 | 3 | 19,953 | 4 | 13,182 | 18 | 17,535 |
| | SOCIOLOGY | 3 | 13,909 | | | | | 8 | 19,613 |
| | ECONOMICS | 2 | 11,615 | 1 | 17,783 | 2 | 12,446 | 3 | 20,893 |
| | POLITICAL SCIENCE | | | 2 | 21,135 | 2 | 13,964 | 3 | 16,341 |
| | HIST., GEOGRAPHY | 1 | 1,000 | | | | | 4 | 12,957 |
| | M-P-E FIELDS | 7 | 18,867 | 9 | 19,055 | 4 | 15,941 | 45 | 16,170 |
| | MATHEMATICS | 1 | 19,055 | 1 | 22,910 | 3 | 13,592 | 9 | 18,244 |
| | PHYSICAL SCIENCES | 3 | 15,021 | 7 | 18,380 | | | 29 | 16,025 |
| | PHYSICS | 3 | 15,021 | 5 | 19,589 | | | 7 | 18,994 |
| | CHEMISTRY | | | 2 | 15,668 | | | 14 | 15,743 |
| | GEOLOGY | | | | | | | 8 | 14,248 |
| | ENGINEERING | 3 | 23,622 | 1 | 20,418 | 1 | 25,704 | 7 | 14,358 |
| | ALL OTHER FIELDS | 6 | 14,344 | 1 | 64,566 | 4 | 11,817 | 13 | 16,861 |
| | LANG. & LIT. | 1 | 15,136 | | | 3 | 10,965 | 3 | 13,909 |
| | ARTS, HUMANITIES | 3 | 11,135 | 1 | 64,566 | | | 5 | 17,140 |
| | PROFESSIONS | 1 | 32,360 | | | 1 | 14,791 | 4 | 20,537 |
| | EDUCATION | 1 | 12,882 | | | | | 1 | 12,589 |
| COHORT 1940 | TOTAL, ALL FIELDS | 37 | 13,421 | 40 | 18,198 | 12 | 14,963 | 259 | 14,757 |
| | BIO-SCIENCES, TOTAL | 13 | 12,023 | 11 | 16,804 | 3 | 16,095 | 131 | 14,365 |
| | BASIC MED. SCIENCES | 8 | 10,934 | 7 | 15,035 | 1 | 18,198 | 98 | 14,859 |
| | PHYSIOLOGY | 2 | 10,000 | 1 | 15,849 | | | 31 | 16,595 |
| | PHARMACOLOGY | 1 | 15,849 | 1 | 13,489 | | | 4 | 11,615 |
| | BIOCHEMISTRY | 2 | 11,482 | 3 | 15,371 | | | 46 | 14,511 |
| | MICROBIOLOGY | 3 | 9,924 | 2 | 14,963 | 1 | 18,198 | 17 | 13,728 |
| | OTHER BIO-SCIENCES | 5 | 13,996 | 4 | 20,418 | 2 | 15,136 | 33 | 13,009 |
| | BOTANY | 2 | 13,964 | 3 | 23,084 | | | 13 | 11,688 |
| | GENETICS | 1 | 15,849 | | | 1 | 19,055 | 6 | 13,750 |
| | ZOOLOGY | 2 | 13,182 | 1 | 14,125 | 1 | 12,023 | 14 | 14,032 |
| | MISC. BIOLOGY | | | | | | | | |
| | MEDICAL SCIENCES | | | 2 | 13,645 | | | 1 | 19,953 |
| | AGRIC. SCIENCES | 3 | 11,569 | 1 | 13,804 | | | 17 | 13,219 |
| | PSYCHOLOGY | 2 | 14,455 | 1 | 28,184 | | | 11 | 10,407 |
| | SOCIAL SCIENCES | 7 | 15,592 | 3 | 18,059 | 5 | 14,589 | 33 | 16,218 |
| | SOCIOLOGY | 2 | 14,289 | 1 | 15,488 | 1 | 12,023 | 6 | 19,276 |
| | ECONOMICS | 1 | 16,982 | 2 | 19,499 | 1 | 19,055 | 14 | 15,035 |
| | POLITICAL SCIENCE | | | | | 1 | 15,849 | 7 | 16,327 |
| | HIST., GEOGRAPHY | 4 | 15,941 | | | 2 | 13,489 | 6 | 16,155 |
| | M-P-E FIELDS | 5 | 15,632 | 19 | 18,803 | 3 | 16,218 | 55 | 17,052 |
| | MATHEMATICS | 1 | 16,218 | 3 | 17,510 | | | 5 | 22,490 |
| | PHYSICAL SCIENCES | 2 | 12,023 | 13 | 19,221 | 2 | 17,378 | 45 | 16,403 |
| | PHYSICS | 1 | 13,182 | 4 | 14,963 | 2 | 17,378 | 19 | 16,615 |
| | CHEMISTRY | 1 | 10,965 | 7 | 20,960 | | | 16 | 17,808 |
| | GEOLOGY | | | 2 | 23,443 | | | 10 | 14,029 |
| | ENGINEERING | 2 | 19,953 | 3 | 18,337 | 1 | 14,125 | 5 | 18,367 |
| | ALL OTHER FIELDS | 7 | 13,271 | 3 | 22,910 | 1 | 10,715 | 11 | 12,073 |
| | LANG. & LIT. | 4 | 13,259 | 1 | 28,184 | 1 | 10,715 | 2 | 15,136 |
| | ARTS, HUMANITIES | 3 | 13,282 | | | | | 4 | 15,941 |
| | PROFESSIONS | | | 1 | 26,915 | | | 3 | 9,550 |
| | EDUCATION | | | 1 | 15,849 | | | 2 | 7,853 |

Appendix 17, continued

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS AND COHORTS

| COHORT | FIELD | TEACHING 50% OR MORE OTHERS LESS NO. | TEACHING 50% OR MORE OTHERS LESS MEAN | ADMIN. 50% OR MORE OTHERS LESS NO. | ADMIN. 50% OR MORE OTHERS LESS MEAN | ALL OTHERS NO. | ALL OTHERS MEAN | UNKNOWN NO. | UNKNOWN MEAN |
|---|---|---|---|---|---|---|---|---|---|
| ALL | TOTAL, ALL FIELDS | 2258 | 10,021 | 1542 | 16,281 | 1502 | 13,467 | 451 | 13,236 |
| COHORT 1935 | TOTAL, ALL FIELDS | 292 | 11,233 | 268 | 18,694 | 217 | 15,291 | 78 | 13,480 |
| | BIO-SCIENCES, TOTAL | 67 | 9,585 | 69 | 18,495 | 45 | 15,517 | 15 | 10,535 |
| | BASIC MED. SCIENCES | 32 | 9,286 | 39 | 18,481 | 27 | 15,944 | 9 | 13,664 |
| | PHYSIOLOGY | 18 | 10,497 | 13 | 18,102 | 15 | 16,622 | 2 | 17,378 |
| | PHARMACOLOGY | 4 | 11,482 | 2 | 15,849 | 2 | 15,488 | 2 | 14,125 |
| | BIOCHEMISTRY | 3 | 2,906 | 6 | 21,217 | 5 | 18,367 | 3 | 10,550 |
| | MICROBIOLOGY | 7 | 9,870 | 18 | 18,223 | 5 | 12,360 | 2 | 15,312 |
| | OTHER BIO-SCIENCES | 35 | 9,870 | 30 | 18,525 | 18 | 14,903 | 6 | 7,133 |
| | BOTANY | 11 | 8,949 | 11 | 19,661 | 8 | 11,990 | | |
| | GENETICS | 3 | 6,657 | 4 | 18,837 | 1 | 19,953 | | |
| | ZOOLOGY | 16 | 10,517 | 7 | 15,798 | 6 | 18,549 | 5 | 5,059 |
| | MISC. BIOLOGY | 5 | 12,647 | 8 | 19,444 | 3 | 15,606 | 1 | 39,811 |
| | MEDICAL SCIENCES | 3 | 15,251 | 6 | 14,511 | 13 | 15,961 | 2 | 6,238 |
| | AGRIC. SCIENCES | 2 | 9,661 | 22 | 15,882 | 17 | 11,266 | 1 | 19,055 |
| | PSYCHOLOGY | 14 | 10,504 | 9 | 20,522 | 20 | 16,350 | 1 | 10,000 |
| | SOCIAL SCIENCES | 80 | 12,362 | 44 | 17,717 | 34 | 16,067 | 16 | 12,303 |
| | SOCIOLOGY | 22 | 12,735 | 14 | 13,759 | 9 | 14,232 | 4 | 7,372 |
| | ECONOMICS | 15 | 13,698 | 7 | 25,371 | 9 | 17,556 | 4 | 10,777 |
| | POLITICAL SCIENCE | 18 | 14,197 | 14 | 19,630 | 9 | 17,919 | 6 | 17,446 |
| | HIST., GEOGRAPHY | 25 | 10,251 | 9 | 16,939 | 7 | 14,551 | 2 | 15,668 |
| | M-P-E FIELDS | 50 | 12,001 | 89 | 21,380 | 49 | 18,406 | 26 | 18,540 |
| | MATHEMATICS | 18 | 12,670 | 17 | 20,009 | 6 | 19,423 | 1 | 25,119 |
| | PHYSICAL SCIENCES | 26 | 10,781 | 55 | 20,651 | 31 | 17,072 | 15 | 17,620 |
| | PHYSICS | 8 | 12,773 | 21 | 25,061 | 12 | 17,815 | 4 | 17,479 |
| | CHEMISTRY | 9 | 8,004 | 18 | 21,245 | 4 | 15,578 | 9 | 18,014 |
| | GEOLOGY | 9 | 12,494 | 16 | 15,510 | 15 | 16,904 | 2 | 16,218 |
| | ENGINEERING | 6 | 16,218 | 17 | 25,564 | 12 | 21,754 | 10 | 19,409 |
| | ALL OTHER FIELDS | 76 | 11,230 | 29 | 15,961 | 39 | 12,405 | 17 | 12,253 |
| | LANG. & LIT. | 35 | 10,872 | 6 | 12,589 | 11 | 14,068 | 6 | 12,210 |
| | ARTS, HUMANITIES | 19 | 13,359 | 7 | 16,928 | 10 | 9,818 | 3 | 12,882 |
| | PROFESSIONS | 13 | 11,522 | 6 | 17,510 | 9 | 12,753 | 5 | 11,376 |
| | EDUCATION | 9 | 8,511 | 10 | 16,710 | 9 | 13,421 | 3 | 13,282 |
| COHORT 1940 | TOTAL, ALL FIELDS | 286 | 11,075 | 365 | 17,733 | 256 | 16,025 | 86 | 15,795 |
| | BIO-SCIENCES, TOTAL | 72 | 10,105 | 129 | 17,338 | 89 | 16,066 | 24 | 18,022 |
| | BASIC MED. SCIENCES | 36 | 11,510 | 82 | 18,005 | 59 | 16,502 | 18 | 19,351 |
| | PHYSIOLOGY | 18 | 11,077 | 9 | 16,555 | 18 | 16,873 | 7 | 18,746 |
| | PHARMACOLOGY | | | 8 | 18,357 | 5 | 17,540 | 3 | 20,262 |
| | BIOCHEMISTRY | 8 | 9,745 | 41 | 19,401 | 24 | 15,773 | 5 | 23,228 |
| | MICROBIOLOGY | 10 | 14,093 | 24 | 16,247 | 12 | 17,013 | 3 | 14,679 |
| | OTHER BIO-SCIENCES | 36 | 8,874 | 47 | 16,241 | 30 | 15,251 | 6 | 14,565 |
| | BOTANY | 12 | 7,216 | 12 | 14,596 | 10 | 13,243 | 3 | 10,881 |
| | GENETICS | 3 | 11,569 | 10 | 18,324 | 5 | 14,061 | 1 | 64,566 |
| | ZOOLOGY | 21 | 9,614 | 24 | 15,878 | 15 | 17,218 | 2 | 10,715 |
| | MISC. BIOLOGY | | | 1 | 30,201 | | | | |
| | MEDICAL SCIENCES | 1 | 10,471 | 8 | 20,302 | 7 | 20,153 | 1 | 12,023 |
| | AGRIC. SCIENCES | 7 | 11,296 | 19 | 17,442 | 12 | 14,709 | 6 | 18,549 |
| | PSYCHOLOGY | 9 | 12,882 | 22 | 16,543 | 21 | 16,648 | 3 | 10,392 |
| | SOCIAL SCIENCES | 61 | 11,832 | 39 | 16,577 | 40 | 15,969 | 14 | 14,125 |
| | SOCIOLOGY | 15 | 10,617 | 11 | 14,791 | 14 | 12,861 | 2 | 15,668 |
| | ECONOMICS | 17 | 11,326 | 11 | 19,337 | 14 | 19,562 | 4 | 14,877 |
| | POLITICAL SCIENCE | 12 | 14,427 | 8 | 19,953 | 4 | 18,517 | 7 | 13,314 |
| | HIST., GEOGRAPHY | 17 | 11,828 | 9 | 13,386 | 8 | 15,182 | 1 | 14,125 |
| | M-P-E FIELDS | 62 | 11,059 | 95 | 21,414 | 54 | 19,236 | 20 | 18,262 |
| | MATHEMATICS | 19 | 11,694 | 17 | 21,497 | 8 | 17,130 | 2 | 19,953 |
| | PHYSICAL SCIENCES | 38 | 10,715 | 52 | 19,943 | 35 | 19,616 | 15 | 17,648 |
| | PHYSICS | 12 | 12,494 | 14 | 19,407 | 7 | 22,096 | 1 | 14,125 |
| | CHEMISTRY | 9 | 11,305 | 27 | 20,328 | 13 | 19,432 | 7 | 19,890 |
| | GEOLOGY | 17 | 9,346 | 11 | 19,704 | 15 | 18,707 | 7 | 16,167 |
| | ENGINEERING | 5 | 11,376 | 26 | 24,634 | 11 | 19,661 | 3 | 20,418 |
| | ALL OTHER FIELDS | 74 | 11,252 | 53 | 14,248 | 33 | 11,370 | 18 | 12,685 |
| | LANG. & LIT. | 26 | 10,134 | 13 | 12,974 | 12 | 10,573 | 7 | 11,671 |
| | ARTS, HUMANITIES | 21 | 12,264 | 8 | 16,740 | 12 | 12,735 | 2 | 13,489 |
| | PROFESSIONS | 9 | 12,527 | 16 | 14,920 | 6 | 10,839 | 4 | 12,957 |
| | EDUCATION | 18 | 11,220 | 16 | 13,548 | 3 | 10,634 | 5 | 13,676 |

Appendix 17, continued

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

| COHORT | FIELD | TEACHING RESEARCH 50% EACH NO. | MEAN | RESEARCH ADMIN. 50% EACH NO. | MEAN | ADMIN. TEACHING 50% EACH NO. | MEAN | RESEARCH 50% OR MORE OTHERS LESS NO. | MEAN |
|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 33 | 13,861 | 22 | 14,544 | 17 | 12,419 | 243 | 14,299 |
| | BIO-SCIENCES, TOTAL | 7 | 9,676 | 10 | 13,836 | 1 | 11,749 | 98 | 13,137 |
| | BASIC MED. SCIENCES | 3 | 7,586 | 8 | 12,375 | | | 48 | 13,790 |
| | PHYSIOLOGY | 1 | 5,012 | 1 | 14,125 | | | 11 | 13,833 |
| | PHARMACOLOGY | | | | | | | 2 | 16,595 |
| | BIOCHEMISTRY | 2 | 9,333 | 5 | 11,067 | | | 21 | 14,220 |
| | MICROBIOLOGY | | | 2 | 15,312 | | | 14 | 12,797 |
| | OTHER BIO-SCIENCES | 4 | 11,615 | 2 | 21,628 | 1 | 11,749 | 50 | 12,538 |
| | BOTANY | | | 1 | 12,882 | | | 25 | 12,647 |
| | GENETICS | | | | | | | 5 | 14,656 |
| | ZOOLOGY | 4 | 11,615 | 1 | 36,310 | 1 | 11,749 | 20 | 11,926 |
| | MISC. BIOLOGY | | | | | | | | |
| | MEDICAL SCIENCES | 1 | 10,965 | 1 | 18,198 | | | 4 | 18,409 |
| | AGRIC. SCIENCES | 2 | 13,489 | | | | | 24 | 13,297 |
| | PSYCHOLOGY | 3 | 13,082 | 1 | 10,000 | | | 15 | 13,448 |
| | SOCIAL SCIENCES | 10 | 18,536 | 5 | 14,724 | 5 | 11,429 | 24 | 15,195 |
| | SOCIOLOGY | 2 | 13,335 | | | 1 | 15,136 | 5 | 14,321 |
| | ECONOMICS | 4 | 22,005 | 4 | 14,207 | 1 | 9,550 | 15 | 16,494 |
| | POLITICAL SCIENCE | 2 | 17,378 | 1 | 16,982 | | | 1 | 12,303 |
| | HIST., GEOGRAPHY | 2 | 19,499 | | | 3 | 11,049 | 3 | 11,931 |
| | M-P-E FIELDS | 5 | 18,030 | 4 | 15,941 | 2 | 12,589 | 59 | 17,155 |
| | MATHEMATICS | 3 | 18,762 | | | 1 | 10,965 | 12 | 19,917 |
| | PHYSICAL SCIENCES | 1 | 14,455 | 4 | 15,941 | 1 | 14,455 | 40 | 16,330 |
| | PHYSICS | | | 1 | 14,125 | 1 | 14,455 | 18 | 16,895 |
| | CHEMISTRY | 1 | 14,455 | 2 | 17,989 | | | 17 | 15,679 |
| | GEOLOGY | | | 1 | 14,125 | | | 5 | 16,595 |
| | ENGINEERING | 1 | 19,953 | | | | | 7 | 17,608 |
| | ALL OTHER FIELDS | 5 | 10,815 | 1 | 18,198 | 9 | 13,049 | 19 | 12,726 |
| | LANG. & LIT. | 3 | 7,189 | | | 2 | 13,645 | 8 | 10,998 |
| | ARTS, HUMANITIES | 1 | 21,878 | | | | | 4 | 13,567 |
| | PROFESSIONS | | | | | 3 | 13,698 | 6 | 15,251 |
| | EDUCATION | 1 | 18,198 | 1 | 18,198 | 4 | 12,303 | 1 | 10,715 |
| COHORT 1950 | TOTAL, ALL FIELDS | 49 | 12,221 | 40 | 16,304 | 4 | 12,589 | 368 | 13,501 |
| | BIO-SCIENCES, TOTAL | 21 | 10,076 | 10 | 14,126 | | | 152 | 12,568 |
| | BASIC MED. SCIENCES | 10 | 11,041 | 5 | 18,030 | | | 97 | 13,011 |
| | PHYSIOLOGY | 1 | 10,965 | 1 | 13,182 | | | 18 | 12,023 |
| | PHARMACOLOGY | | | 1 | 19,953 | | | 8 | 15,093 |
| | BIOCHEMISTRY | 3 | 11,482 | 1 | 22,910 | | | 40 | 13,344 |
| | MICROBIOLOGY | 6 | 10,839 | 2 | 17,783 | | | 31 | 12,691 |
| | OTHER BIO-SCIENCES | 11 | 9,276 | 5 | 11,067 | | | 55 | 11,828 |
| | BOTANY | 6 | 7,793 | 3 | 11,305 | | | 20 | 12,388 |
| | GENETICS | | | 1 | 11,482 | | | 9 | 12,146 |
| | ZOOLOGY | 5 | 11,429 | 1 | 10,000 | | | 26 | 11,311 |
| | MISC. BIOLOGY | | | | | | | | |
| | MEDICAL SCIENCES | 2 | 18,621 | 2 | 17,783 | | | 8 | 18,043 |
| | AGRIC. SCIENCES | 5 | 10,715 | 2 | 16,406 | | | 40 | 12,340 |
| | PSYCHOLOGY | 1 | 34,675 | 3 | 14,455 | 2 | 14,125 | 12 | 14,071 |
| | SOCIAL SCIENCES | 3 | 13,592 | 2 | 17,179 | | | 31 | 13,539 |
| | SOCIOLOGY | 1 | 14,455 | | | | | 12 | 12,758 |
| | ECONOMICS | | | 1 | 16,982 | | | 9 | 15,333 |
| | POLITICAL SCIENCE | | | | | | | 5 | 16,369 |
| | HIST., GEOGRAPHY | 2 | 13,182 | 1 | 17,378 | | | 5 | 10,328 |
| | M-P-E FIELDS | 13 | 15,878 | 20 | 17,561 | 1 | 12,023 | 109 | 15,496 |
| | MATHEMATICS | 5 | 18,536 | 2 | 20,893 | | | 17 | 19,289 |
| | PHYSICAL SCIENCES | 7 | 15,538 | 16 | 17,155 | | | 77 | 14,481 |
| | PHYSICS | 1 | 13,182 | 7 | 17,552 | | | 27 | 16,301 |
| | CHEMISTRY | | | 5 | 20,045 | | | 22 | 13,774 |
| | GEOLOGY | 6 | 15,969 | 4 | 13,567 | | | 28 | 13,434 |
| | ENGINEERING | 1 | 8,511 | 2 | 17,783 | 1 | 12,023 | 15 | 17,111 |
| | ALL OTHER FIELDS | 4 | 9,773 | 1 | 16,595 | 1 | 10,471 | 16 | 10,903 |
| | LANG. & LIT. | 1 | 8,912 | | | | | 4 | 13,335 |
| | ARTS, HUMANITIES | 2 | 11,350 | | | | | 6 | 13,282 |
| | PROFESSIONS | | | | | | | 5 | 7,312 |
| | EDUCATION | 1 | 7,943 | 1 | 16,595 | 1 | 10,471 | 1 | 10,965 |

Appendix 17, continued

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

| COHORT | FIELD | TEACHING 50% OR MORE OTHERS LESS NO. | TEACHING 50% OR MORE OTHERS LESS MEAN | ADMIN. 50% OR MORE OTHERS LESS NO. | ADMIN. 50% OR MORE OTHERS LESS MEAN | ALL OTHERS NO. | ALL OTHERS MEAN | UNKNOWN NO. | UNKNOWN MEAN |
|---|---|---|---|---|---|---|---|---|---|
| COHORT 1945 | TOTAL, ALL FIELDS | 301 | 10,200 | 234 | 16,403 | 210 | 14,292 | 65 | 15,267 |
| | BIO-SCIENCES, TOTAL | 66 | 9,605 | 56 | 16,451 | 40 | 11,782 | 13 | 13,973 |
| | BASIC MED. SCIENCES | 24 | 10,264 | 29 | 17,657 | 18 | 13,200 | 10 | 14,388 |
| | PHYSIOLOGY | 6 | 9,550 | 4 | 19,055 | 8 | 11,955 | 2 | 28,184 |
| | PHARMACOLOGY | 2 | 13,804 | 5 | 17,458 | 5 | 12,023 | | |
| | BIOCHEMISTRY | 7 | 10,132 | 15 | 17,486 | 4 | 17,479 | 5 | 13,182 |
| | MICROBIOLOGY | 9 | 10,181 | 5 | 17,298 | 1 | 15,136 | 3 | 10,634 |
| | OTHER BIO-SCIENCES | 42 | 9,252 | 27 | 15,251 | 22 | 10,738 | 3 | 12,685 |
| | BOTANY | 8 | 9,944 | 14 | 15,488 | 8 | 13,221 | 1 | 9,550 |
| | GENETICS | 4 | 9,121 | 2 | 16,218 | | | 1 | 15,136 |
| | ZOOLOGY | 29 | 8,933 | 11 | 14,791 | 14 | 9,534 | 1 | 14,125 |
| | MISC. BIOLOGY | 1 | 15,136 | | | | | | |
| | MEDICAL SCIENCES | 3 | 3,441 | 4 | 18,729 | 6 | 19,499 | 1 | 30,201 |
| | AGRIC. SCIENCES | 6 | 12,114 | 12 | 16,565 | 9 | 13,386 | 3 | 15,136 |
| | PSYCHOLOGY | 21 | 13,082 | 13 | 14,663 | 14 | 10,929 | 1 | 1,995 |
| | SOCIAL SCIENCES | 85 | 9,898 | 42 | 14,607 | 41 | 13,527 | 21 | 15,623 |
| | SOCIOLOGY | 27 | 9,239 | 8 | 16,934 | 13 | 10,927 | 5 | 10,000 |
| | ECONOMICS | 16 | 11,204 | 12 | 18,517 | 9 | 18,014 | 9 | 21,598 |
| | POLITICAL SCIENCE | 11 | 11,749 | 10 | 11,092 | 3 | 17,510 | 1 | 19,953 |
| | HIST., GEOGRAPHY | 31 | 9,278 | 12 | 13,131 | 16 | 13,049 | 6 | 13,386 |
| | M-P-E FIELDS | 43 | 10,924 | 60 | 19,739 | 58 | 18,965 | 17 | 18,223 |
| | MATHEMATICS | 17 | 10,275 | 7 | 16,868 | 14 | 19,499 | 3 | 15,488 |
| | PHYSICAL SCIENCES | 22 | 11,303 | 40 | 20,153 | 32 | 17,657 | 11 | 18,897 |
| | PHYSICS | 6 | 13,592 | 9 | 23,807 | 17 | 18,473 | 4 | 20,655 |
| | CHEMISTRY | 8 | 10,998 | 23 | 19,735 | 8 | 17,938 | 5 | 17,140 |
| | GEOLOGY | 8 | 10,116 | 8 | 17,733 | 7 | 15,538 | 2 | 20,184 |
| | ENGINEERING | 4 | 11,749 | 13 | 20,167 | 12 | 22,217 | 3 | 18,762 |
| | ALL OTHER FIELDS | 77 | 10,279 | 47 | 14,555 | 42 | 13,011 | 9 | 13,734 |
| | LANG. & LIT. | 26 | 9,161 | 7 | 16,485 | 11 | 12,750 | 1 | 11,482 |
| | ARTS, HUMANITIES | 16 | 9,661 | 5 | 13,182 | 8 | 9,972 | | |
| | PROFESSIONS | 10 | 10,233 | 11 | 14,395 | 16 | 15,779 | 4 | 14,372 |
| | EDUCATION | 25 | 12,078 | 24 | 14,398 | 7 | 11,712 | 4 | 13,725 |
| COHORT 1950 | TOTAL, ALL FIELDS | 341 | 10,895 | 328 | 15,852 | 269 | 14,788 | 77 | 14,046 |
| | BIO-SCIENCES, TOTAL | 70 | 10,125 | 60 | 15,003 | 55 | 13,104 | 13 | 16,566 |
| | BASIC MED. SCIENCES | 28 | 10,983 | 40 | 15,614 | 33 | 14,203 | 10 | 17,060 |
| | PHYSIOLOGY | 6 | 11,661 | 5 | 15,488 | 7 | 20,087 | 1 | 60,258 |
| | PHARMACOLOGY | 5 | 13,804 | 7 | 16,327 | 3 | 26,711 | | |
| | BIOCHEMISTRY | 6 | 10,193 | 14 | 15,035 | 11 | 12,276 | 7 | 13,712 |
| | MICROBIOLOGY | 11 | 9,979 | 14 | 15,899 | 12 | 11,330 | 2 | 19,499 |
| | OTHER BIO-SCIENCES | 42 | 9,592 | 20 | 13,853 | 22 | 11,615 | 3 | 15,021 |
| | BOTANY | 17 | 10,585 | 8 | 13,182 | 9 | 10,937 | 3 | 15,021 |
| | GENETICS | | | 2 | 19,725 | | | | |
| | ZOOLOGY | 25 | 8,970 | 10 | 13,427 | 13 | 12,108 | | |
| | MISC. BIOLOGY | | | | | | | | |
| | MEDICAL SCIENCES | 1 | 18,198 | 10 | 17,337 | 10 | 26,547 | | |
| | AGRIC. SCIENCES | 11 | 11,506 | 22 | 15,185 | 15 | 11,462 | 2 | 19,725 |
| | PSYCHOLOGY | 9 | 11,721 | 17 | 17,519 | 40 | 14,565 | 5 | 12,135 |
| | SOCIAL SCIENCES | 95 | 11,202 | 46 | 14,478 | 47 | 16,322 | 15 | 14,411 |
| | SOCIOLOGY | 22 | 10,605 | 8 | 14,877 | 9 | 14,054 | | |
| | ECONOMICS | 20 | 13,474 | 13 | 16,478 | 5 | 23,989 | 3 | 15,136 |
| | POLITICAL SCIENCE | 17 | 10,817 | 13 | 15,163 | 23 | 16,041 | 10 | 14,420 |
| | HIST., GEOGRAPHY | 36 | 10,627 | 12 | 11,749 | 10 | 16,033 | 2 | 13,335 |
| | M-P-E FIELDS | 61 | 11,352 | 110 | 18,569 | 61 | 16,469 | 26 | 16,540 |
| | MATHEMATICS | 21 | 12,439 | 10 | 19,320 | 6 | 17,713 | 4 | 11,955 |
| | PHYSICAL SCIENCES | 33 | 10,685 | 69 | 17,886 | 33 | 15,371 | 17 | 18,521 |
| | PHYSICS | 12 | 9,868 | 22 | 20,849 | 12 | 17,013 | 2 | 20,655 |
| | CHEMISTRY | 8 | 9,579 | 27 | 17,526 | 4 | 18,198 | 8 | 17,938 |
| | GEOLOGY | 13 | 12,303 | 20 | 15,524 | 17 | 13,747 | 7 | 18,621 |
| | ENGINEERING | 7 | 11,482 | 31 | 19,939 | 22 | 17,915 | 5 | 14,589 |
| | ALL OTHER FIELDS | 94 | 10,685 | 63 | 13,198 | 41 | 12,773 | 16 | 9,226 |
| | LANG. & LIT. | 32 | 9,893 | 14 | 12,650 | 13 | 10,887 | 4 | 9,333 |
| | ARTS, HUMANITIES | 31 | 10,179 | 10 | 13,002 | 6 | 11,661 | 3 | 4,823 |
| | PROFESSIONS | 15 | 12,667 | 12 | 11,286 | 10 | 14,521 | 4 | 10,000 |
| | EDUCATION | 16 | 11,683 | 27 | 14,541 | 12 | 14,289 | 5 | 12,647 |

Appendix 17, continued

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

| COHORT | FIELD | TEACHING RESEARCH 50% EACH | | RESEARCH ADMIN. 50% EACH | | ADMIN. TEACHING 50% EACH | | RESEARCH 50% OR MORE OTHERS LESS | |
|---|---|---|---|---|---|---|---|---|---|
| | | NO. | MEAN | NO. | MEAN | NO. | MEAN | NO. | MEAN |
| COHORT 1955 | TOTAL, ALL FIELDS | 60 | 11,290 | 26 | 15,354 | 13 | 11,460 | 618 | 11,712 |
| | BIO-SCIENCES, TOTAL | 25 | 10,347 | 11 | 13,071 | 3 | 9,924 | 314 | 11,018 |
| | BASIC MED. SCIENCES | 19 | 10,534 | 9 | 13,250 | 2 | 9,333 | 212 | 11,274 |
| | PHYSIOLOGY | 8 | 10,412 | | | 1 | 9,773 | 60 | 12,128 |
| | PHARMACOLOGY | 1 | 7,586 | 1 | 15,849 | | | 15 | 13,282 |
| | BIOCHEMISTRY | 4 | 10,839 | 4 | 15,136 | | | 81 | 10,856 |
| | MICROBIOLOGY | 6 | 11,092 | 4 | 11,092 | 1 | 8,912 | 56 | 10,541 |
| | OTHER BIO-SCIENCES | 6 | 9,773 | 2 | 12,303 | 1 | 11,220 | 102 | 10,510 |
| | BOTANY | 2 | 9,333 | | | 1 | 11,220 | 38 | 10,191 |
| | GENETICS | 1 | 10,000 | | | | | 14 | 9,984 |
| | ZOOLOGY | 2 | 9,441 | 1 | 11,220 | | | 28 | 9,886 |
| | MISC. BIOLOGY | 1 | 11,220 | 1 | 13,489 | | | 22 | 12,380 |
| | MEDICAL SCIENCES | 2 | 11,885 | 1 | 15,136 | | | 13 | 11,543 |
| | AGRIC. SCIENCES | 4 | 10,592 | 1 | 18,198 | | | 67 | 11,140 |
| | PSYCHOLOGY | 1 | 14,125 | 2 | 13,645 | | | 16 | 11,902 |
| | SOCIAL SCIENCES | 14 | 11,220 | 1 | 18,621 | 6 | 10,881 | 52 | 12,045 |
| | SOCIOLOGY | 5 | 11,324 | | | 2 | 10,233 | 18 | 11,914 |
| | ECONOMICS | 3 | 11,569 | 1 | 18,621 | 1 | 10,965 | 13 | 14,174 |
| | POLITICAL SCIENCE | 1 | 15,136 | | | 1 | 10,965 | 16 | 12,234 |
| | HIST., GEOGRAPHY | 5 | 10,280 | | | 2 | 11,482 | 5 | 7,798 |
| | M-P-E FIELDS | 11 | 13,630 | 10 | 18,114 | 2 | 14,791 | 136 | 13,879 |
| | MATHEMATICS | 4 | 13,413 | 1 | 19,055 | | | 25 | 15,233 |
| | PHYSICAL SCIENCES | 5 | 13,614 | 6 | 17,783 | 1 | 13,804 | 88 | 12,964 |
| | PHYSICS | 1 | 14,125 | 3 | 18,059 | 1 | 13,804 | 27 | 15,701 |
| | CHEMISTRY | 3 | 14,018 | 2 | 14,623 | | | 34 | 11,450 |
| | GEOLOGY | 1 | 12,023 | 1 | 25,119 | | | 27 | 12,527 |
| | ENGINEERING | 2 | 14,125 | 3 | 18,481 | 1 | 15,849 | 23 | 16,266 |
| | ALL OTHER FIELDS | 3 | 11,749 | | | 2 | 12,882 | 20 | 10,471 |
| | LANG. & LIT. | 1 | 10,965 | | | 1 | 12,303 | 3 | 10,715 |
| | ARTS, HUMANITIES | 1 | 8,511 | | | 1 | 13,489 | 7 | 10,302 |
| | PROFESSIONS | 1 | 17,378 | | | | | 8 | 10,116 |
| | EDUCATION | | | | | | | 2 | 12,303 |
| COHORT 1960 | TOTAL, ALL FIELDS | 102 | 9,205 | 26 | 12,196 | 10 | 11,454 | 796 | 9,508 |
| | BIO-SCIENCES, TOTAL | 34 | 8,917 | 12 | 12,092 | | | 449 | 8,962 |
| | BASIC MED. SCIENCES | 21 | 8,933 | 9 | 12,053 | | | 291 | 9,424 |
| | PHYSIOLOGY | 8 | 9,333 | 2 | 9,886 | | | 60 | 9,599 |
| | PHARMACOLOGY | | | | | | | 19 | 11,179 |
| | BIOCHEMISTRY | 7 | 9,333 | 6 | 13,542 | | | 135 | 9,146 |
| | MICROBIOLOGY | 6 | 8,004 | 1 | 8,912 | | | 77 | 9,387 |
| | OTHER BIO-SCIENCES | 13 | 8,896 | 3 | 12,210 | | | 158 | 8,172 |
| | BOTANY | 2 | 7,943 | | | | | 44 | 7,511 |
| | GENETICS | | | 1 | 9,550 | | | 35 | 8,054 |
| | ZOOLOGY | 8 | 8,837 | 1 | 12,023 | | | 41 | 8,101 |
| | MISC. BIOLOGY | 3 | 9,773 | 1 | 15,849 | | | 38 | 9,216 |
| | MEDICAL SCIENCES | | | 1 | 12,023 | | | 15 | 10,947 |
| | AGRIC. SCIENCES | 4 | 8,811 | 3 | 11,931 | | | 43 | 8,799 |
| | PSYCHOLOGY | 3 | 8,576 | | | | | 18 | 10,025 |
| | SOCIAL SCIENCES | 20 | 9,431 | 3 | 10,311 | 5 | 10,139 | 63 | 10,139 |
| | SOCIOLOGY | 7 | 10,067 | | | | | 22 | 10,839 |
| | ECONOMICS | 5 | 9,594 | 2 | 10,471 | 1 | 12,882 | 21 | 11,049 |
| | POLITICAL SCIENCE | 6 | 9,085 | 1 | 10,000 | 1 | 6,457 | 10 | 10,715 |
| | HIST., GEOGRAPHY | 2 | 8,035 | | | 3 | 10,881 | 10 | 6,919 |
| | M-P-E FIELDS | 31 | 9,298 | 6 | 13,542 | 2 | 12,303 | 184 | 11,218 |
| | MATHEMATICS | 10 | 8,953 | | | 2 | 12,303 | 36 | 11,877 |
| | PHYSICAL SCIENCES | 15 | 9,121 | 6 | 13,542 | | | 120 | 10,934 |
| | PHYSICS | 11 | 9,027 | 3 | 15,849 | | | 39 | 11,805 |
| | CHEMISTRY | 2 | 10,000 | 2 | 10,965 | | | 49 | 11,503 |
| | GEOLOGY | 2 | 8,811 | 1 | 12,882 | | | 32 | 9,220 |
| | ENGINEERING | 6 | 10,392 | | | | | 28 | 11,634 |
| | ALL OTHER FIELDS | 10 | 9,840 | 1 | 12,882 | 3 | 13,386 | 24 | 6,912 |
| | LANG. & LIT | 2 | 9,441 | | | | | 7 | 7,562 |
| | ARTS, HUMANITIES | 4 | 7,899 | | | 1 | 10,000 | 8 | 4,181 |
| | PROFESSIONS | 3 | 12,685 | | | 1 | 9,550 | 8 | 10,087 |
| | EDUCATION | 1 | 12,023 | 1 | 12,882 | 1 | 25,119 | 1 | 10,000 |

Appendix 17, continued

## GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

| COHORT | FIELD | TEACHING 50% OR MORE OTHERS LESS | | ADMIN. 50% OR MORE OTHERS LESS | | ALL OTHERS | | UNKNOWN | |
|---|---|---|---|---|---|---|---|---|---|
| | | NO. | MEAN | NO. | MEAN | NO. | MEAN | NO. | MEAN |
| COHORT 1955 | TOTAL, ALL FIELDS | 445 | 9,993 | 221 | 14,427 | 270 | 11,883 | 72 | 12,371 |
| | BIO-SCIENCES, TOTAL | 103 | 9,493 | 49 | 13,986 | 82 | 10,139 | 17 | 9,811 |
| | BASIC MED. SCIENCES | 47 | 9,389 | 33 | 14,282 | 48 | 10,076 | 12 | 8,947 |
| | PHYSIOLOGY | 14 | 10,266 | 7 | 13,356 | 19 | 8,645 | 2 | 11,615 |
| | PHARMACOLOGY | 3 | 13,182 | 4 | 14,877 | 2 | 11,350 | | |
| | BIOCHEMISTRY | 12 | 8,332 | 9 | 15,606 | 11 | 11,152 | 7 | 8,128 |
| | MICROBIOLOGY | 18 | 8,958 | 13 | 13,756 | 16 | 11,108 | 3 | 9,404 |
| | OTHER BIO-SCIENCES | 56 | 9,586 | 16 | 13,393 | 34 | 10,233 | 5 | 12,247 |
| | BOTANY | 25 | 9,711 | 4 | 12,303 | 13 | 9,721 | 1 | 12,882 |
| | GENETICS | | | 1 | 14,455 | 2 | 6,457 | | |
| | ZOOLOGY | 28 | 9,324 | 10 | 13,335 | 17 | 10,500 | 2 | 9,550 |
| | MISC. BIOLOGY | 3 | 11,135 | 1 | 18,198 | 2 | 18,198 | 2 | 15,312 |
| | MEDICAL SCIENCES | 11 | 10,738 | 13 | 16,359 | 8 | 19,558 | 5 | 16,218 |
| | AGRIC. SCIENCES | 13 | 9,773 | 11 | 14,273 | 15 | 11,858 | 2 | 20,893 |
| | PSYCHOLOGY | 9 | 9,404 | 8 | 17,989 | 30 | 12,199 | 3 | 8,845 |
| | SOCIAL SCIENCES | 122 | 10,486 | 40 | 14,103 | 47 | 12,309 | 11 | 13,918 |
| | SOCIOLOGY | 30 | 10,345 | 8 | 12,375 | 9 | 12,053 | 4 | 10,000 |
| | ECONOMICS | 30 | 12,417 | 9 | 15,969 | 16 | 13,070 | 5 | 18,451 |
| | POLITICAL SCIENCE | 27 | 9,526 | 15 | 14,279 | 10 | 12,706 | 2 | 13,335 |
| | HIST., GEOGRAPHY | 35 | 9,884 | 8 | 13,645 | 12 | 11,240 | | |
| | M-P-E FIELDS | 81 | 10,804 | 54 | 14,849 | 47 | 15,174 | 25 | 13,601 |
| | MATHEMATICS | 31 | 10,715 | 8 | 16,455 | 17 | 14,514 | 4 | 11,350 |
| | PHYSICAL SCIENCES | 35 | 10,287 | 34 | 14,174 | 16 | 13,489 | 16 | 12,882 |
| | PHYSICS | 8 | 11,955 | 10 | 16,218 | 4 | 16,313 | 6 | 12,351 |
| | CHEMISTRY | 8 | 9,016 | 15 | 14,478 | 4 | 13,182 | 7 | 14,266 |
| | GEOLOGY | 19 | 10,207 | 9 | 11,778 | 8 | 12,410 | 3 | 11,049 |
| | ENGINEERING | 15 | 12,323 | 12 | 15,820 | 14 | 18,320 | 5 | 18,707 |
| | ALL OTHER FIELDS | 106 | 9,363 | 46 | 13,698 | 41 | 10,541 | 9 | 10,910 |
| | LANG. & LIT. | 33 | 8,801 | 8 | 12,023 | 11 | 9,431 | 2 | 8,317 |
| | ARTS, HUMANITIES | 30 | 8,837 | 7 | 13,052 | 8 | 10,998 | 1 | 3,020 |
| | PROFESSIONS | 15 | 10,202 | 9 | 16,218 | 10 | 10,815 | 1 | 16,982 |
| | EDUCATION | 28 | 10,233 | 22 | 13,617 | 12 | 11,112 | 5 | 14,388 |
| COHORT 1960 | TOTAL, ALL FIELDS | 593 | 8,546 | 126 | 12,380 | 280 | 10,269 | 73 | 9,326 |
| | BIO-SCIENCES, TOTAL | 151 | 8,149 | 26 | 11,227 | 70 | 10,404 | 18 | 6,812 |
| | BASIC MED. SCIENCES | 63 | 8,122 | 16 | 11,599 | 44 | 11,069 | 11 | 7,570 |
| | PHYSIOLOGY | 26 | 8,835 | 7 | 11,146 | 17 | 10,671 | 2 | 8,912 |
| | PHARMACOLOGY | 4 | 11,157 | 1 | 11,482 | 2 | 11,615 | 2 | 5,559 |
| | BIOCHEMISTRY | 16 | 6,999 | 5 | 11,749 | 15 | 11,768 | 5 | 7,245 |
| | MICROBIOLOGY | 17 | 7,628 | 3 | 12,494 | 10 | 10,642 | 2 | 9,773 |
| | OTHER BIO-SCIENCES | 88 | 8,170 | 10 | 10,666 | 26 | 9,374 | 7 | 5,773 |
| | BOTANY | 25 | 7,907 | | | 3 | 7,644 | 1 | 1,820 |
| | GENETICS | 4 | 8,561 | 3 | 9,623 | 4 | 9,606 | 3 | 5,980 |
| | ZOOLOGY | 34 | 8,268 | 4 | 10,058 | 9 | 6,522 | 3 | 8,190 |
| | MISC. BIOLOGY | 25 | 8,241 | 3 | 12,784 | 10 | 13,676 | | |
| | MEDICAL SCIENCES | 8 | 10,808 | 6 | 16,982 | 12 | 11,955 | 3 | 14,791 |
| | AGRIC. SCIENCES | 13 | 9,103 | 4 | 11,885 | 12 | 9,567 | 5 | 9,036 |
| | PSYCHOLOGY | 14 | 10,282 | 2 | 14,289 | 36 | 11,824 | 4 | 17,179 |
| | SOCIAL SCIENCES | 154 | 8,341 | 22 | 11,872 | 53 | 10,025 | 14 | 10,983 |
| | SOCIOLOGY | 37 | 7,826 | 8 | 10,292 | 14 | 8,682 | 4 | 11,028 |
| | ECONOMICS | 24 | 9,505 | 1 | 12,589 | 15 | 14,039 | 4 | 11,157 |
| | POLITICAL SCIENCE | 31 | 9,038 | 9 | 13,523 | 14 | 8,331 | 4 | 12,589 |
| | HIST., GEOGRAPHY | 62 | 7,911 | 4 | 11,615 | 10 | 9,594 | 2 | 8,035 |
| | M-P-E FIELDS | 82 | 9,016 | 19 | 14,562 | 31 | 11,820 | 13 | 11,220 |
| | MATHEMATICS | 34 | 9,487 | 4 | 15,312 | 8 | 12,846 | 1 | 15,136 |
| | PHYSICAL SCIENCES | 39 | 8,658 | 9 | 15,098 | 15 | 10,649 | 9 | 10,025 |
| | PHYSICS | 9 | 10,634 | 1 | 15,488 | 1 | 14,455 | | |
| | CHEMISTRY | 10 | 8,811 | 3 | 14,791 | 3 | 9,404 | 5 | 10,328 |
| | GEOLOGY | 20 | 7,826 | 5 | 15,206 | 11 | 10,715 | 4 | 9,661 |
| | ENGINEERING | 9 | 8,868 | 6 | 13,335 | 8 | 13,221 | 3 | 14,232 |
| | ALL OTHER FIELDS | 171 | 8,610 | 47 | 11,952 | 66 | 8,811 | 16 | 7,876 |
| | LANG. & LIT | 63 | 7,900 | 4 | 10,116 | 13 | 9,532 | 2 | 12,303 |
| | ARTS, HUMANITIES | 38 | 8,253 | 2 | 10,000 | 16 | 8,772 | 1 | 3,981 |
| | PROFESSIONS | 41 | 9,588 | 7 | 14,312 | 21 | 8,576 | 11 | 7,321 |
| | EDUCATION | 29 | 9,431 | 34 | 11,869 | 16 | 8,598 | 2 | 10,592 |